International Labour Office

UNDERSTANDING THE HEALTH IMPACT OF CHILDREN'S WORK

RESULTS FROM NATIONAL CHILD LABOUR SURVEYS

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Fundamental Principles and Rights at Work Branch (FUNDAMENTALS)
International Labour Organization (ILO)

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Introduction

Far too many children in the world remain trapped in child labour, compromising their individual and our collective futures. The latest ILO global estimates indicate that 152 million children worldwide are child labourers, accounting for almost 10 percent of the child population as a whole. Children in hazardous work directly endangering their health, safety and moral development make up about half of all child labourers, numbering 72.5 million in absolute terms.[1]

Reducing children's involvement in work that arms their health, safety and moral development is the global community's most urgent child labour challenge. The current study reviews available data on occupational injuries and illnesses as part of a broader effort to guide efforts in this regard. It brings together information from a wide variety of nationally representative household surveys in an attempt to shed additional light on the health effects of children's work within and across less-industrialised countries and on which types of children's work pose the greatest risk of ill-health.

The analysis shows that a number of important insights can be gained from the available household surveys, especially in terms of relative risk. Yet the analysis of information from available household surveys also points to important outstanding knowledge gaps, particularly in terms of the causal link between specific children's work activities and children's health outcomes. Other kinds of information and analyses are necessary to address these gaps.

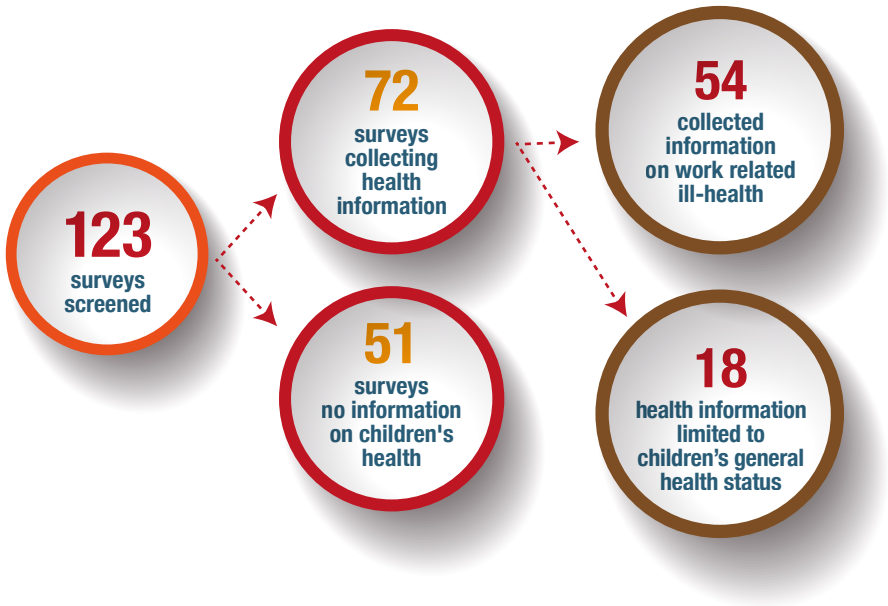
The remainder of the Report is structured as follows. Section 2 presents a comprehensive inventory of datasets from national household surveys with information on children's work and health. Section 3, based on this inventory, begins the discussion of work and health by assessing correlations between children's work and their *general* health status. Section 4 then looks at information on *work-related* injuries and ill-health, using the indicators of prevalence and incidence density, to provide a more precise indication of links between work and health. Section 5 concludes with a forwarding looking discussion of outstanding measurement challenges and where future research efforts should be focused.

1 Global estimates of child labour: Results and trends, 2012-2016. International Labour Office (ILO), Geneva, 2017.

2. Data sources

An inventory exercise was undertaken as a first stage of this study to identify available household survey datasets containing information relating to children's work and health. The exercise encompassed surveys collecting information on children's work. It included ILO SIMPOC surveys, living standards surveys, integrated household surveys, labour force surveys and other national household survey programmes. The inventory resulting from this exercise, presented in Figure 1, includes a total of 123 datasets for 54 different countries.

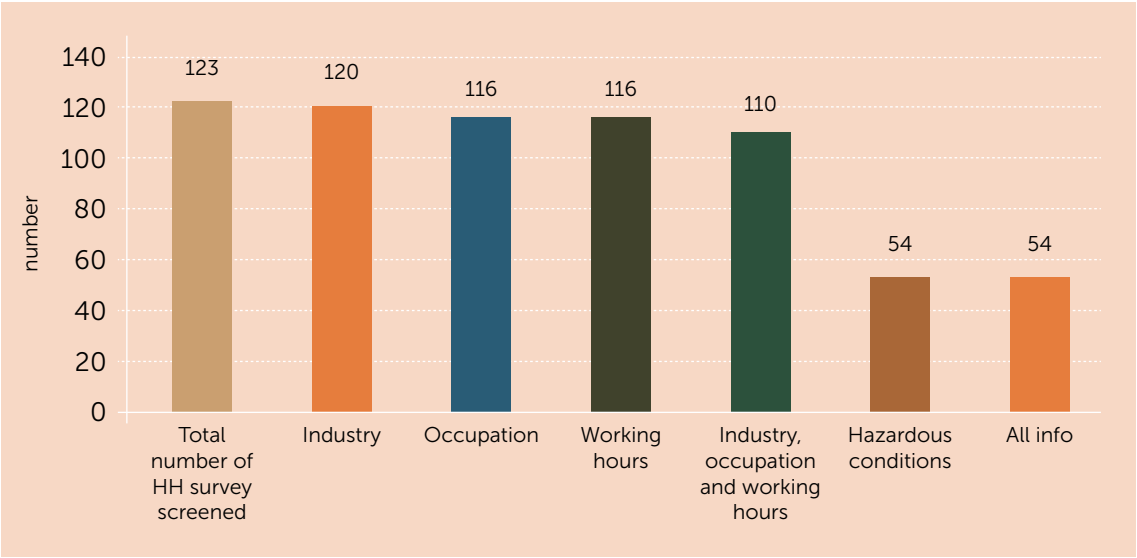
Figure 1.
Number of surveys screened and surveys reporting information on health and injuries



The inventory shows that out of the 123 surveys screened, 40% (i.e., 51 surveys) contained no information at all on children's health. What is more, of the 72 surveys with health information, only 54 collected information on *work related* ill-health, while in the remaining 18 surveys health

information was limited to children's general health status.[2] Only three of the 72 surveys collecting health information included *both* a module on general health (addressed to all household members) and a separate set of questions on work related ill-health.

Figure 2.
Number of surveys reporting information on employment sector, occupation, working hours and hazardous conditions



The inventory exercise also looked at the availability of the information necessary to construct the indicator of child labour used in the ILO global estimates of child labour, i.e., industry, occupation, working hours and additional details on hazardous conditions.[3] As reported in Figure 2, the information from the surveys is more complete in this regard. Of the 123 surveys, 110 included all three of the main information items needed (i.e., industry, occupation and working hours), although only 54 contained these three main information items *plus* information on hazardous conditions.

2 *General health status* refers to the health status of children without reference to the source of these problems, meaning in the case of working children that no distinction is made between health problems relating to work and problems stemming from other causes; *work-related ill-health* refers to children's health problems relating to their involvement in work activities.

3 Specifically, this information is necessary for the estimation of child labour among 12-13 year-olds and among 15-17 year-olds. For the former group, the information is necessary to distinguish permissible "light work" from other forms of work that are not permissible for this age group. For the latter group, the information is necessary to distinguish hazardous work constituting child labour from other forms of work.

Table 1.
List of surveys – information available for children aged 5-17

Country	Year	Survey	Information on health problems				Information on hazardous conditions	
			General		Work-related injuries/ ill-health			
			Adult module	Child module	Adult module	Child module	Adult module	Child module
Albania	2010	Child Labour Survey (CLS, SIMPOC)			✓ [b]	✓ [c]		✓
Bangladesh	2013	Child Labour Survey (CLS-LFS, SIMPOC)			✓ [c]		✓	
Cambodia	2012	Child Labour Survey (CLS-LFS, SIMPOC)			✓ [c]		--	--
Colombia	2011	Encuesta Nacional de Trabajo Infantil (ENTI, SIMPOC)	✓ [c]		✓ [c]			
Ecuador	2012	Encuesta Nacional de Trabajo Infantil (ENTI, SIMPOC)			✓ [c],	✓ [c]		✓
El Salvador	2013	Encuesta Nacional de Hogares de Propositòs Mùltiples Survey (EHPM, SIMPOC)	✓ [f]				✓	
Indonesia	2009	Child Labour Survey (CLS, SIMPOC)				✓ [c]		✓
Jordan	2007	Child Labour Survey (CLS, SIMPOC)			✓ [b]	✓ [c]		✓
Kyrgyzstan	2007	Child Labour Survey (CLS, SIMPOC)			✓ [b]	✓ [c]		✓
Madagascar	2007	Enquête Nationale sur le Travail des Enfants (ENTE, SIMPOC)			✓ [b]	✓ [c]		✓
Malawi	2010	Integrated Household Survey (IHS)	✓ [e]				--	--
Moldova	2009	Children's Activities Survey (CAS, SIMPOC)				✓ [c]		✓
Niger	2009	Enquête Nationale sur le Travail des Enfants (ENTE, SIMPOC)			✓ [b]	✓ [c]		✓
Panama-1	2008	Encuesta de Trabajo Infantil (ETI)				✓ [b]		✓
Panama-2	2010	Encuesta de Trabajo Infantil (ETI)				✓ [b]		✓
Panama-3	2012	Encuesta de Trabajo Infantil (ETI)			✓ [b]	✓ [b]		✓
Panama-4	2014	Encuesta de Trabajo Infantil (ETI)			✓ [b]	✓ [b]		✓
Peru	2007	Encuesta Nationale de Trabajo Infantil (ENTI)			✓ [c]	✓ [c]		✓
Philippines	2011	Survey on Children (SOC, SIMPOC)			✓ [b]	✓ [b]		✓
Senegal	2011	Sénégal Enquête de Suivi de la Pauvreté au Sénégal (ESPS-II)	✓ [f]				--	--
Togo	2009	Child Labour Survey (CLS, SIMPOC)			✓ [b],[g]	✓ [c]		✓
Uganda-1	2005	National Panel Survey (NPS)	✓ [f]				--	--
Uganda-2	2012	National Panel Survey (NPS)	✓ [f]				--	--
Uruguay	2009	Encuesta Nacional de Trabajo Infantil (ENTI, SIMPOC)				✓ [c]		✓
Viet Nam-1(a)	2006	Household Living Standard Survey (HLSS)	✓ [f]				--	--
Viet Nam-2	2012	Child Labour Survey (CLS-LFS, SIMPOC)			✓ [d]		✓	
Yemen	2010	Child Labour Survey (CLS, SIMPOC)			✓ [b]	✓ [c]		✓

Notes: (a) Age group 6-17; (b) No information about the recall period of the health problems; (c) health problems during past year; (d) health problems during past week; (e) health problems during past 2 weeks; and (f) health problems during past 4 weeks or past months; (g) Information not used because of the large number of missing values

The current study makes use of the most recent of the survey datasets in the inventory, i.e., those from 2006 or later – a total 27 datasets from 22 countries. Table 1 details the type of information available for each of the surveys. In particular, for each survey, it specifies (a) the type of health information collected, i.e., whether the information relates to general health problems or work-related health problems; and (b) whether or not information is collected on hazardous conditions in the workplace. For each of these categories of information, the table specifies (c) the type of

respondent, i.e., children themselves or a knowledgeable adult responding on behalf of the child. Finally, for each category/respondent combination, the table details the recall period, i.e., past week, past two weeks, past month or past year.

Available Information varies considerably across the survey datasets included, in turn affecting the comparability of results and the ability to draw generalised conclusions. Seven of the survey datasets contain information on general health status, of which six contain *only* information for this indicator. Information on work-related ill-health is more common, available for 20 of the datasets, either from the child module exclusively (five datasets), the adult module exclusively (four datasets) or from both (11 datasets). Information on hazardous conditions is available for 19 of the datasets.

General health status indicates the health status of children without reference to the source of these problems, meaning in the case of working children that no distinction is made between health problems relating to work and problems stemming from other causes. The typical survey question used to collect information on the general health status is the following: During the past [period of time] have you suffered from an illness or injury? (yes/no).

Work-related ill-health refers to children's health problems relating to their involvement in work activities. The typical survey question used to collect such information is the following: Did she/he suffered of any injury or illness due to work? (Include accidents that took place while commuting to/from work).

3. Children's general health status and employment

In this section, we look at possible correlations between work and children's general health status. Data are presented on reported health problems without reference to the source of these problems, meaning in the case of working children that no distinction is made between health problems relating to work and problems stemming from other causes (see also Panel 1). Reported general health problems is therefore only a very indirect and imperfect indicator of the health impact of children's work, but it is unfortunately the only health indicator available for six of the surveys included in our list (i.e., El Salvador, Malawi, Senegal, Uganda-1, Uganda-2 and Viet Nam).

The specific recall period used by the survey instruments in collecting information on the general health status, reported in Table 2, varies from two months in Malawi to four months in Senegal and Viet Nam; in El Salvador, Uganda-1 and Uganda-2, the recall period is not an explicit time period but rather "past months".

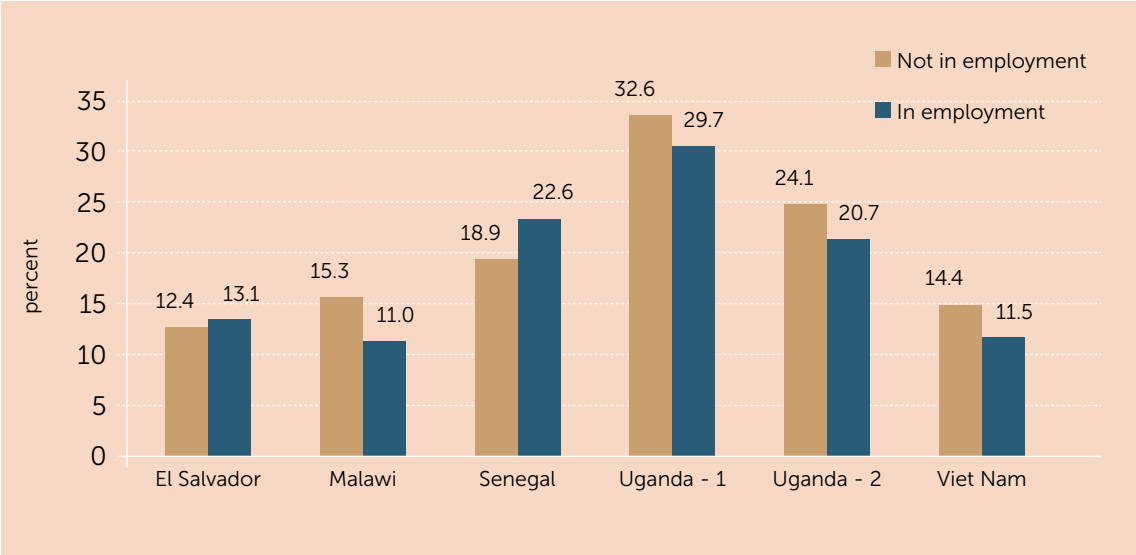
Table 2.
Surveys providing information on the general status of children's health

Country	Year	Survey	Recall period
El Salvador	2013	Encuesta Nacional de Hogares de Propositòs Mùltiples Survey (EHPM)	Past months.
Malawi	2010/11	Integrated Household Survey (IHS)	Past 2 weeks.
Senegal	2011	Enquête de Suivi de la Pauvreté au Sénégal (ESPS-II)	Past 4 weeks
Uganda-1	2005/06	National Panel Survey (NPS)	Past months.
Uganda-2	2011/12	National Panel Survey (NPS)	Past months.
Viet Nam	2006	Household Living Standard Survey (HLSS)	Past 4 weeks.

Working children appear to be at least as healthy as their non-working counterparts. Indeed, as reported in Figure 3, a higher share of *non*-working children experience health problems in both of the Uganda surveys and in Malawi and Viet Nam. Only in El Salvador and Senegal, on the other hand, do non-working children report fewer health problems, and the difference in this regard between the two groups in the former country is very small. These general patterns are similar for male and female children across the six surveys (Figure A1 and Table A1 in the Annex).

Figure 3.
Working children are not consistently less healthy than their non-working counterparts

Percentage of children experiencing health problems, by employment status

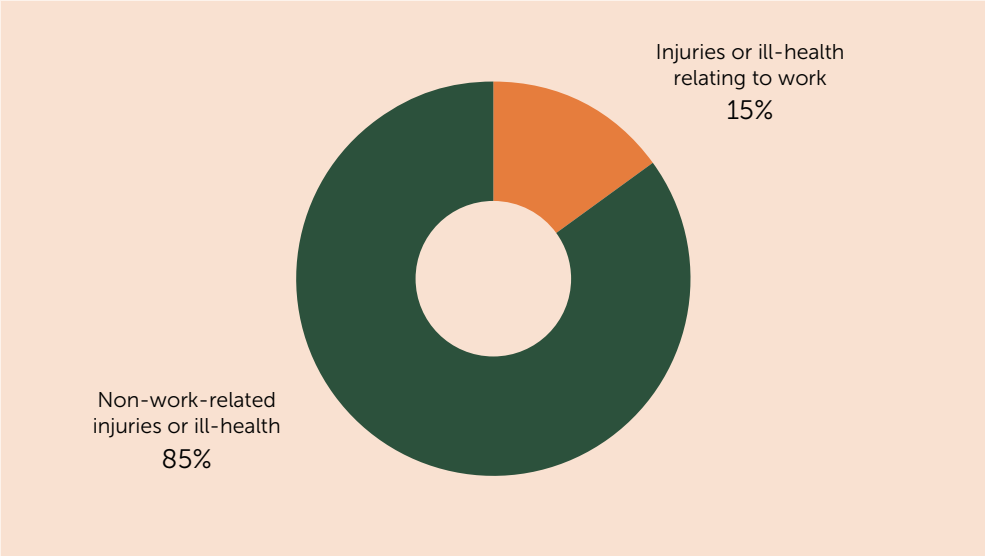


Notes: (a) Uganda-1 refers to the 2005 reference period and Uganda-2 to the 2011 reference period.
Source: Calculations based on national household survey datasets (see Table 1).

Panel 1.
Health problems due to employment versus general health problems

One obvious question that arises when looking at general health problems is the share of these problems that are attributable to work. The Colombia Encuesta Nacional de Trabajo Infantil (ENTI, SIMPOC, 2011), the only survey in our list that collects information (from an adult household member) both on general and work-related health problems, offers some insight in this regard in the Colombian context.

Figure 4.
Colombian working children aged 5-17 years facing health problem, by reason of problem



Source: Calculations based on Colombia Encuesta Nacional de Trabajo Infantil (ENTI, SIMPOC, 2011).

Results from this survey, reported in Figure 4, suggest that most of children's health problems arise from factors outside the workplace. Injuries or episodes of ill-health specifically relating to work accounted for 15% of total health problems while the remainder were unrelated to work. This result underscores the limits of general health as an indicator of work-related ill-health.

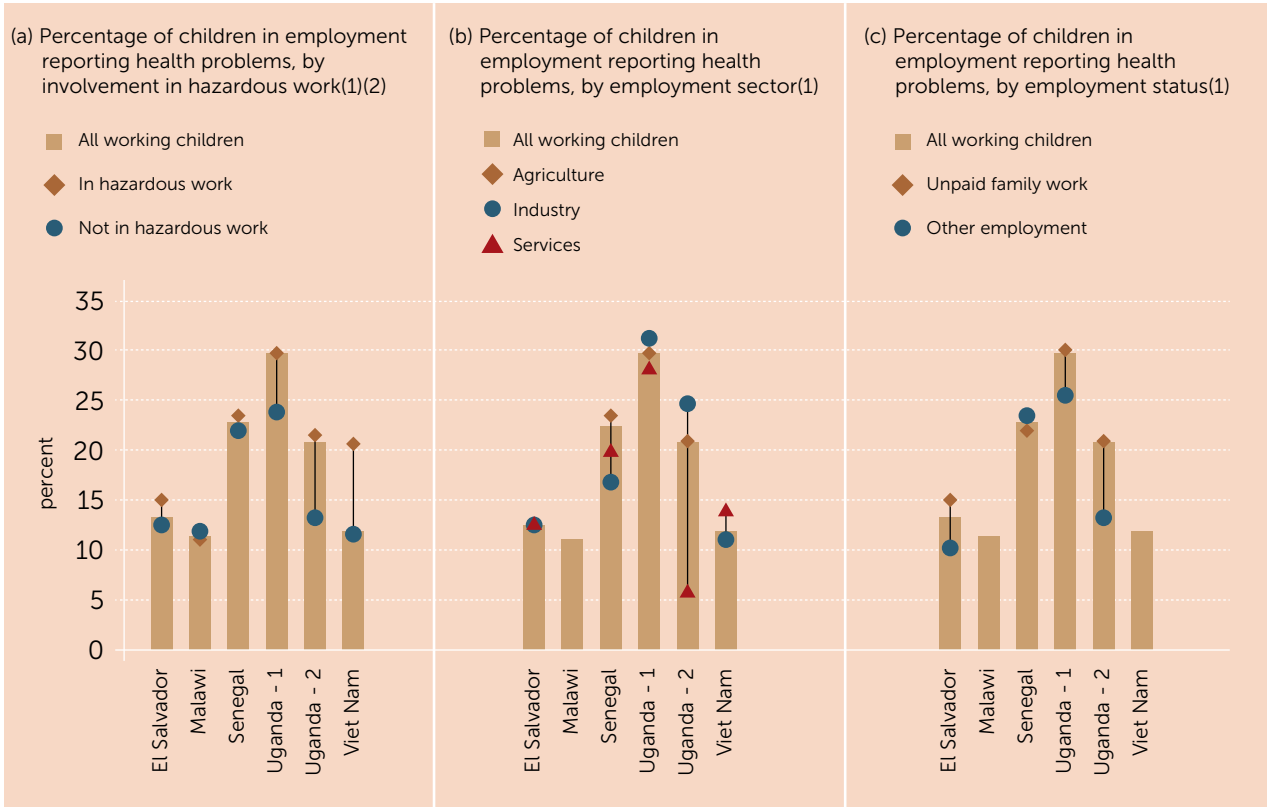
These results should *not*, however, be interpreted as evidence that children's work is not detrimental to their health, for a number of important reasons.

First, the results could be driven in part by a selection bias, i.e., healthier children may be relatively more likely to be selected by their families for work. This "healthy worker" effect may disguise the negative impact of work on children's health, resulting in working children scoring higher than non-working children in measures of general health. A second related issue is the possibility of bias arising from simultaneity: a child experiencing an episode of illness or injury at the time of the survey may simply not be able to work. What is more, the episode of ill-health may itself result from a workplace accident or the accumulated effect of past work experience. Third, the results do not consider the dynamic nature of the relationship between work and health. In particular, a

growing body of literature suggests that many of the health effects of work show up only later in the lifecycle.[4] Finally, the results do not consider the severity of reported health problems. It is possible that working children experience more serious episodes of ill-health, even if these episodes occur less frequently. These caveats underscore the difficulties in disentangling the relationship between work and health, especially in the absence more detailed information on health status over an extended time period.

Looking at how general health status varies among different categories of children's work nonetheless offers some initial insight into which categories pose a relatively greater health risk. The general health status of children in hazardous work[5] is compared with that of other working children in Figure 5a, while differences in general health status among working children in different sectors and different employment modalities are reported in Figure 5b and Figure 5c, respectively. The same comparisons decomposed by sex are reported in Table A2 to Table A5 in the Annex.

Figure 5.
General health status varies somewhat according to the hazardousness, sector and status of employment



Notes: (1) Uganda-1 refers to the 2005 reference period and Uganda-2 to the 2011 reference period; (2) A child is defined to be involved in hazardous work if he/she works in hazardous industry or hazardous occupation, or works for 43 or more hours per week.
Source: Calculations based on national household survey datasets (see Table 1).)

4 For a discussion of this point, see ILO, *Joining forces against child labour. Inter-agency report for The Hague Global Child Labour Conference of 2010"*, Geneva, 2010, Chapter 6.
5 Following the approach used in the ILO global child labour estimates exercise, a child is defined to be involved in hazardous work if he/she works in a hazardous industry or hazardous occupation, or works for 43 or more hours per week.

The results suggest that children working in hazardous industries and occupations are worse-off health wise than other working children, in turn suggesting that hazardous work has a relatively greater adverse health impact. There are also significant differences in the general health status of children working in different sectors and modalities of employment, although patterns in this regard appear to be country-specific. The question of the relative health risk associated with different categories of children's work will be discussed in more detail in the subsequent sections of this Report, using two more precise indicators of health impact (i.e., prevalence and incidence density of reported work-related health problems) and data from a larger set of child labour surveys.

4. Children's work-related injuries or ill-health

In the following sections, we use two indicators to analyse children's work related injuries or ill-health: the prevalence rate and the incidence density rate. The prevalence rate indicates how widespread the phenomenon is, while the incidence density conveys information about the risk of being injured faced by working children. Taken together, the two indicators offer a better, although still partial, picture of the health impact of children's work.

4.1 Prevalence

In this section, we focus on reported *work-related* injuries and ill-health – exploiting data drawn primarily from the ILO SIMPOC survey programme and other IPEC-supported surveys (see Table 3).

These surveys collect information on work-related health problems through questions in two separate questionnaire modules, the first directed to the most knowledgeable adult member and the second to children themselves. The child module includes questions on injuries and ill-health due to work within a recall period of typically one year (*during the last year*). In the adult module, respondents are typically asked whether a child has *ever* had an injury or ill-health episode due to work, without reference to a specific time period. Table 3 below specifies the recall period used by the surveys instruments to collect the information on work-related injuries and ill-health.

Table 3.

List of surveys containing information on work-related injuries and ill-health episodes for children aged 5-17 years

Country	Year	Survey	Information on work-related injuries and ill-health		Information on exposure to hazardous conditions		Recall period for adult module	Recall period for child module
			Adult module	Child module	Adult module	Child module		
Albania	2010	Child Labour Survey (CLS, SIMPOC)	✓	✓	--	--	Ever	12 months
Bangladesh	2013	Child Labour Survey (CLS-LFS, SIMPOC)	✓	--	✓	--	12 months	NA
Cambodia	2012	Child Labour Survey (CLS-LFS, SIMPOC)	✓	--	--	--	12 months	NA
Colombia	2011	Encuesta Nacional de Trabajo Infantil (ENTI, SIMPOC)	✓	--	--	--	12 months	NA
Ecuador	2012	Encuesta Nacional de Trabajo Infantil (ENTI, SIMPOC)	✓	✓	--	✓	Ever	12 months
Indonesia	2009	Child Labour Survey (CLS, SIMPOC)	--	✓	--	✓	NA	12 months
Jordan	2007	Child Labour Survey (CLS, SIMPOC)	✓	✓	--	✓	Ever	12 months
Kyrgyzstan	2007	Child Labour Survey (CLS, SIMPOC)	✓	✓	--	✓	Ever	12 months
Madagascar	2007	Enquête Nationale sur le Travail des Enfants (ENTE, SIMPOC)	✓	✓	--	✓	Ever	12 months
Moldova	2009	Children's Activities Survey (CAS, SIMPOC)	--	✓	--	✓	NA	12 months
Niger	2009	Enquête Nationale sur le Travail des Enfants (ENTE, SIMPOC)	✓	✓	--	✓	Ever	12 months
Panama-1	2008	Encuesta de Trabajo Infantil (ETI)	--	✓	--	✓	NA	Ever
Panama-2	2010	Encuesta de Trabajo Infantil (ETI)	--	✓	--	✓	NA	Ever
Panama-3	2012	Encuesta de Trabajo Infantil (ETI)	✓	✓	--	✓	Ever	Ever
Panama-4	2014	Encuesta de Trabajo Infantil (ETI)	✓	✓	--	✓	Ever	Ever
Peru	2007	Encuesta Nationale de Trabajo Infantil (ENTI)	✓	✓	--	✓	Ever	12 months
Philippines	2011	Survey on Children (SOC, SIMPOC)	✓	✓	--	✓	Ever	12 months
Togo	2009	Child Labour Survey (CLS, SIMPOC)	✓	✓	--	✓	Ever	12 months
Uruguay	2009	Encuesta Nacional de Trabajo Infantil (ENTI, SIMPOC)	--	✓	--	✓	NA	12 months
Viet Nam-2	2012	Child Labour Survey (CLS-LFS, SIMPOC)	✓	--	✓	--	1 week	NA
Yemen	2010	Child Labour Survey (CLS, SIMPOC)	✓	✓	--	✓	Ever	12 months

Notes: (a) Age group 6-17; (b) No information about the recall period of the health problems; (c) health problems during past year; (d) Information not used because of the large number of missing values; (e) health problems during past week; (f) health problems during past 2 weeks; and (g) health problems during past 4 weeks or past months.

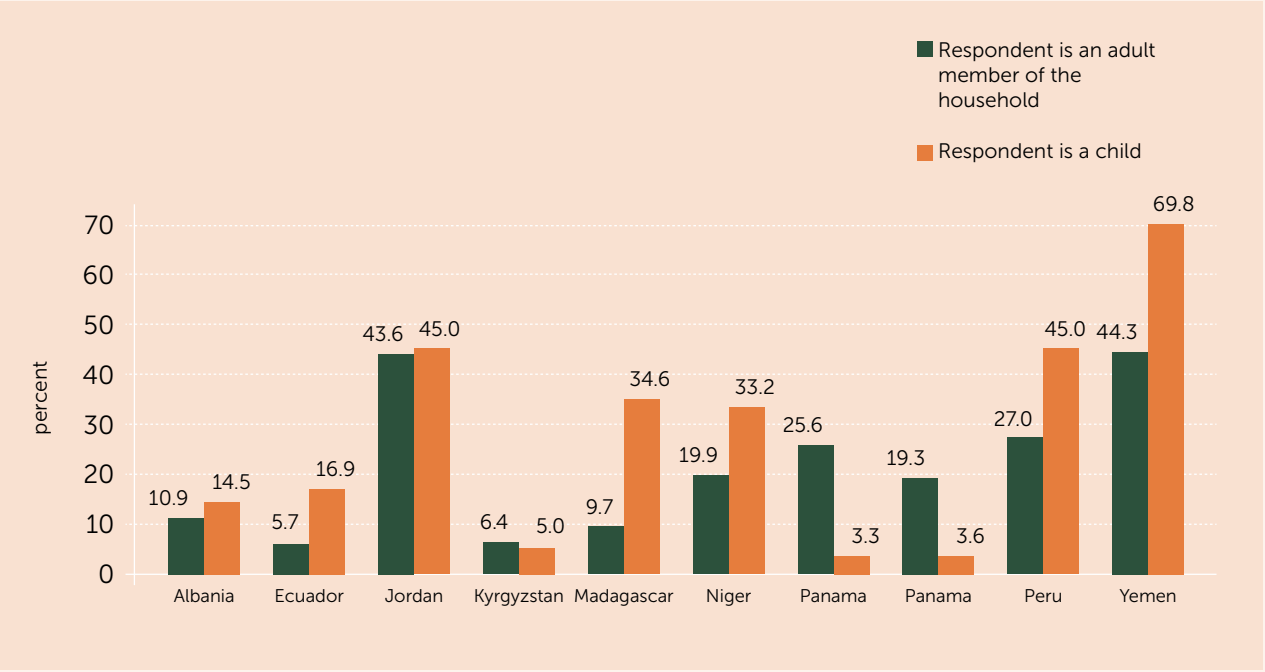
In the discussion that follows, we make use of the information provided by the adult household member except for the six surveys (i.e., Panama-1, Panama-2, Indonesia, Moldova, Togo and Uruguay) in which the information is only available from the child module. It should be noted in this context that children and adults do not always respond in a similar manner to questions regarding children's health status, and caution should therefore be exercised in drawing comparisons between estimates based on children's responses and estimates based on adult responses. This point is discussed furtherin Panel 2.

Panel 2.
Comparing the responses of children and adults concerning children's work-related health problems

Do adult household members perceive children's health differently than children themselves? As respondents are not always consistent across surveys, i.e., some question only children themselves, others question only adult household members and still others question both, the issue of the comparability of responses is important.

In an attempt to address this question, we compare the responses of children and adults regarding children's work-related problems in the 10 surveys from our list that collected information from both children and adults. The results, reported in Figure 6, suggest that in most instances children are more likely to report work-related health problems than adults responding for them.

Figure 6.
Prevalence of work-related health problems, by respondent



Source: Calculations based on national household survey datasets (see Table 1).

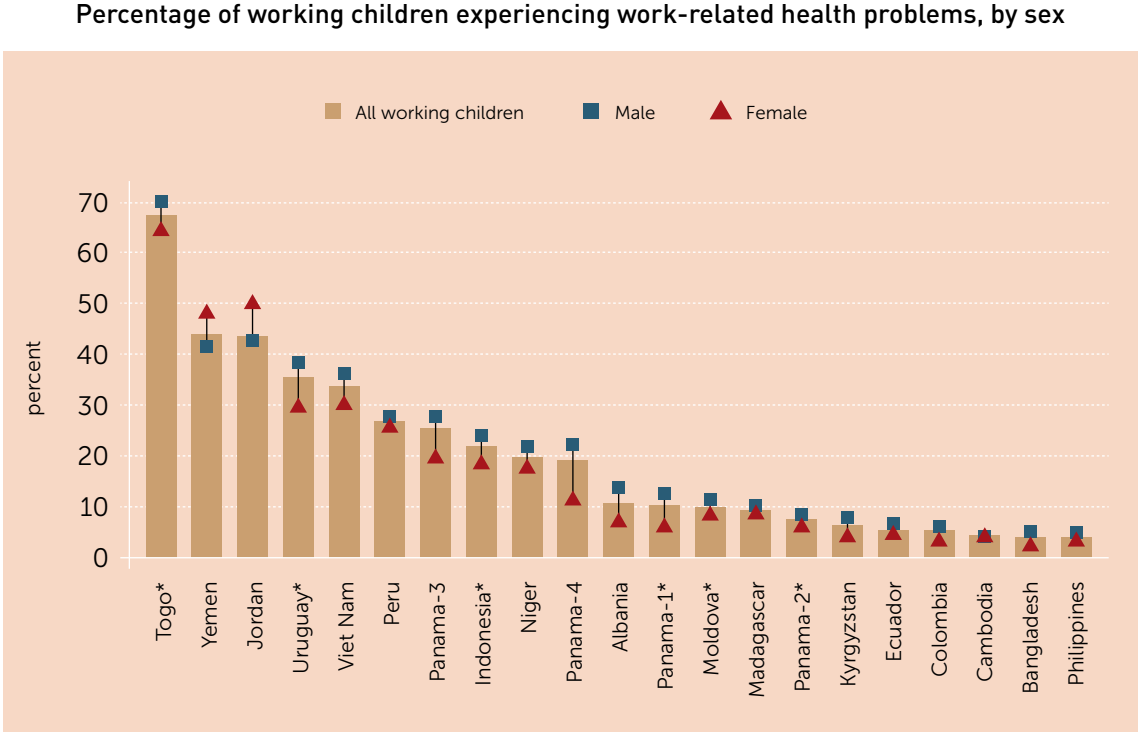
Panel 2. (cont.)

This pattern holds in seven of our 10 surveys (the exceptions are Kyrgyzstan (where the differences between child and adult responses are relatively small) and the two Panama surveys). The results reported in Figure 6 indicate that child and adult responses can often differ dramatically. In Yemen, for example, the prevalence estimate based on children's responses is 26 percentage points higher than that based on adult responses. Similarly, in Peru, the prevalence estimate based on children's responses is almost double that based on adult responses. The differences are also dramatic in Panama, but the pattern is in the opposite direction – adults are much more likely to report work-related health problems than children responding for themselves.

These inconsistent results point to the need for further investigation on why the responses of children and adults differ, and, perhaps, even more importantly, on which group offers the most accurate picture of how work impacts children's health.

Health problems due to work appear very common for children in many countries (Figure 7). In Togo, two-thirds of all working children report having experienced an episode of illness or injury because of their work during the past year. The share exceeds 40% in Jordan and Yemen, and is over one-third in Uruguay, also for a 12-month recall period. In Viet Nam, work-related health problems affected 34% of working children during a much shorter – one-week – reference period. At the other end of the spectrum lie Cambodia, Bangladesh and Philippines, where less than five percent of working children experienced health problems caused by work over a one-year period. Boys appear more likely than girls to suffer work-related health problems in most countries (Yemen and Jordan are the main exceptions), suggesting that households may be more likely to assign work associated with greater health risks to boys.

Figure 7.
Health problems due to work appear very common for children in many countries



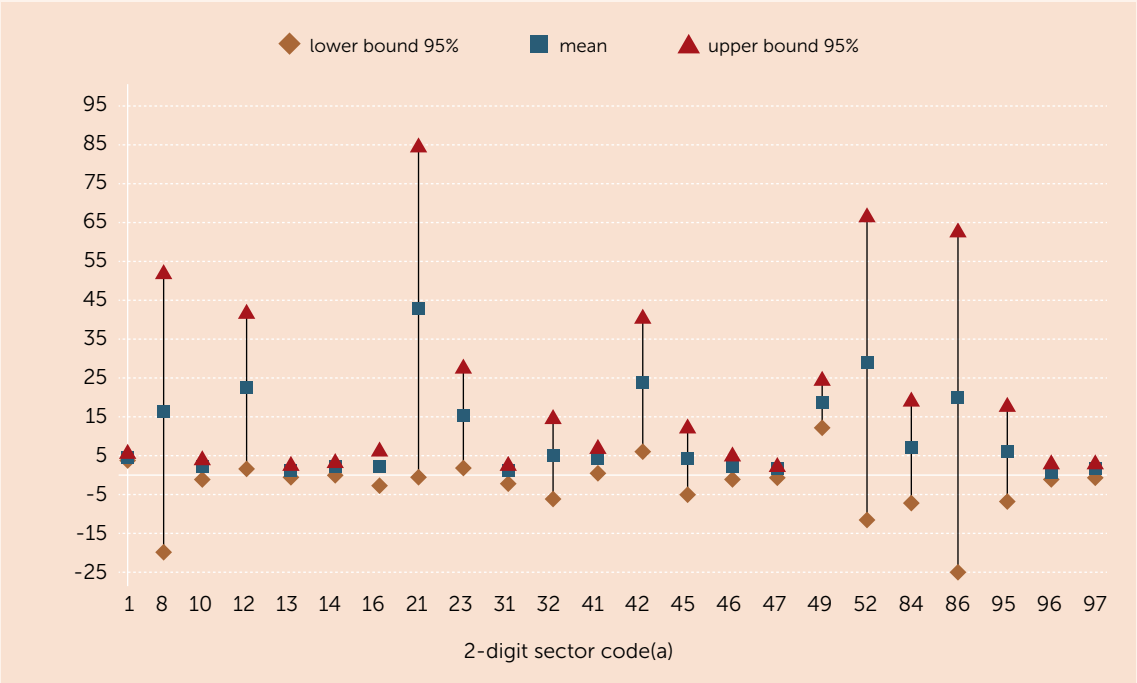
While this indicator provides a more direct measure of the health impact of work it is still by no means perfect, for at least two important reasons. First, the indicator captures only children who were working at the time of the survey, and *not* any children who had had to cease work *because of* health problems. Second, the time bias discussed in the previous section also still applies – the indicator does not, in other words, account for any possible future health problems arising from working as a child. For both these reasons, the estimates for work-related health problems likely understate the actual health problems arising from children's work.

Panel 3.
Estimating the occurrence of work-related health problems at the 2-digit sector level

Estimates of the percentage of working children incurring work-related health problems at the 2-digit sector of employment, and the associated confidence intervals for each, are reported in Figure 8. As shown, the confidence intervals, which describe the range of values within which we can be reasonably sure the true effect actually lies, in many instances are very large, suggesting a high degree of uncertainty. Among children involved in subsector 21 (the manufacture of wood and products of wood), for instance, the estimated mean for work-related health problems is 43%, but the confidence interval is 86 percentage points, meaning that the estimate is highly unreliable.

Figure 8.
Confidence intervals for estimates at the 2-digit sector level are in many instances very large

Percentage of working children reporting work related injuries/ill-health, by 2-digit sector of employment,[a] mean and confidence interval, not weighted cases



Notes: (a) 2-digit sector codes are as follows: 1=Crop and animal production, hunting; 8=Mining of coal and lignite; 10=Other mining and quarrying;12=Manufacture of food products;13=Manufacture of tobacco products; 14=Manufacture of textiles; 16=Manufacture of wearing apparel; 21=Manufacture of wood and products of wood; 23=Manufacture of other non-metallic miner; 31=Manufacture of furniture; 32=Other manufacturing; 41=Construction of buildings; 42=Civil engineering; 45=Wholesale and retail trade and repair; 46=Wholesale trade, except of motor vehicles; 47=Retail trade, except of motor vehicles; 49=Land transport and transport via pipeline; 52=Warehousing and support activities for; 84=Public administration and defense; comp; 86=Human health activities;95=Repair of computers and personal and ho; 96=Other personal service activities; and 97=Activities of households as employers.
Source: Calculations based on Banglades, Child Labour Survey 2013.

A test of the difference of means conducted on the subsector of employment offers further evidence of the difficulties in drawing conclusions, even in instances when the difference between averages is high (Table 4). There is an apparently large difference in the means for the Crop, animal production and hunting subsector (1) and the Mining of coal and lignite subsector (8) (i.e., almost 12 percentage points), but the test of the difference of means shows that this difference is not statistically significant. We cannot, therefore, conclude that the former subsector is associated with greater work-related

Panel 3. (cont.)
Estimating the occurrence of work-related health problems at the 2-digit sector level

health problems than the latter subsector, despite the large percentage point difference in the average prevalence of work-related health problems in the two subsectors.

Table 4.
Test difference of the mean

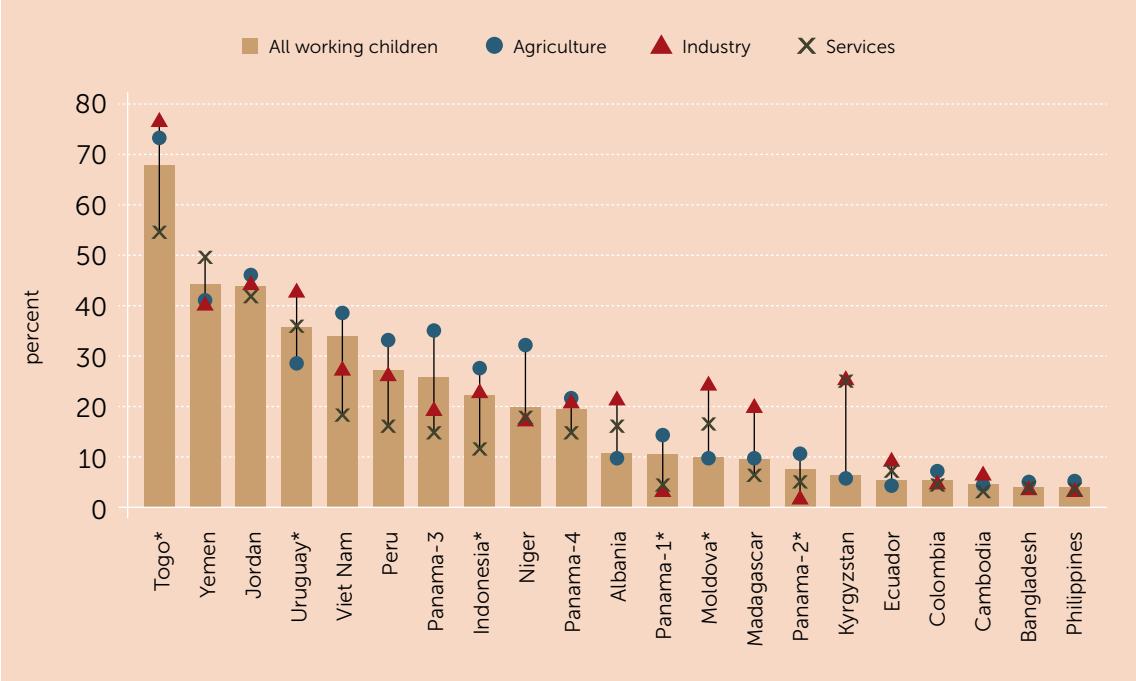
Sector 1	Sector 2	Diff. mean	t-statistic
Crop and animal production, hunting (1)	Mining of coal and lignite (8)	-11.78	t = -1.3265
Crop and animal production, hunting (1)	Manufacture of tobacco products (13)	3.22	t = 1.9522
Crop and animal production, hunting (1)	Wholesale trade, except of motor vehicles (46)	2.18	t = 0.8522
Manufacture of tobacco products (13)	Construction of buildings (41)	-2.728	t = -1.4048
Other mining and quarrying (10)	Manufacture of food products (12)	-19.87	t = -3.4200
Manufacture of food products (12)	Manufacture of wood and products of wood (21)	-20.634	t = -1.0114

Source: Calculations based on Bangladesh, Child Labour Survey 2013.

The health consequences of children's work appear to depend to an important extent on the sector in which the work takes place. Health problems are most common in either the agriculture or industry sectors in most of the countries. In only two, i.e., Yemen and Kyrgyzstan, is work in the service sector associated with the highest occurrence of health problems (Figure 9).

Figure 9.
The health consequences of children's work appear to depend in many cases on the sector in which the work takes place

Percentage of working children experiencing work-related health problems, by sector



Notes: (*)Information about work-related health problems is provided by children.
Source: Calculations based on national household survey datasets (see Table 1).

But again, in many instances these totals mask differences by sex. Indeed, as reported in Table 5, sex differences in work-related health problems *within sectors* are often very large. In the services sector in Albania, for example, boys are six times more likely than girls to experience health problems arising from their work. In the agriculture sector in Kyrgyzstan and Panama, boys are twice as likely as girls to incur work-related health problems. In other instances, e.g., the services sector in Jordan, Kyrgyzstan and Yemen, or the agriculture sector in Niger and Jordan, girls are the ones facing relatively greater health risks from their work. These differences suggest that the work performed by boys and girls, and the health consequences of this work, can also often differ in important ways *within* sectors.

Table 5.
Percent of children aged 5-17 years reporting work related injuries/ill-health, by sector and sex

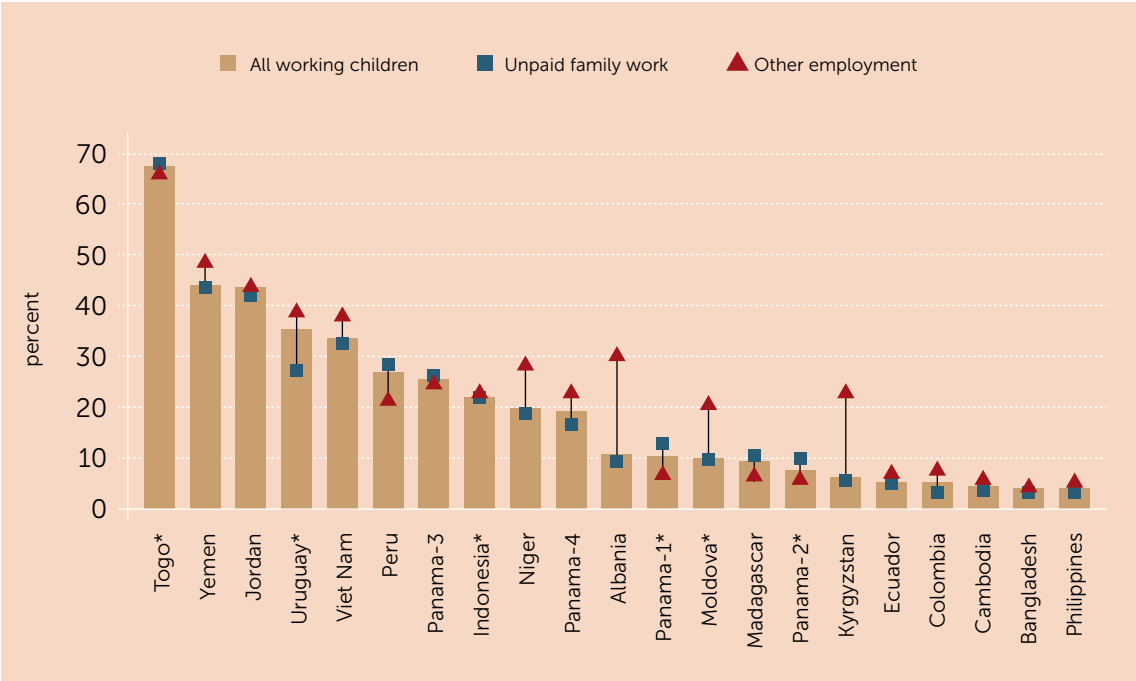
Country	Year	Agriculture			Industry			Services		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Albania	2010	11.3	7.4	9.7	24.5	15.4	22.4	23.8	3.9	16.0
Bangladesh	2013	5.7	3.5	4.8	5.4	2.2	4.0	4.5	3.0	4.0
Cambodia	2012	3.9	4.2	4.0	7.5	6.5	6.9	2.5	3.8	3.2
Colombia	2011	7.6	4.1	7.1	6.0	4.4	5.5	4.7	3.4	4.2
Ecuador	2012	4.6	4.2	4.4	9.3	9.0	9.2	8.8	5.2	7.2
Indonesia*	2009	28.5	24.5	27.1	27.7	17.9	23.1	10.5	13.1	11.9
Jordan	2007	42.5	52.5	45.6	44.7	24.9	44.3	41.8	50.9	42.1
Kyrgyzstan	2007	6.9	3.5	5.4	39.7	11.3	25.9	20.3	33.1	25.2
Madagascar	2007	9.2	9.6	9.4	33.3	7.7	20.3	6.5	6.7	6.6
Moldova*	2009	10.4	8.6	9.6	28.3	9.1	24.7	24.8	6.8	17.0
Niger	2009	31.3	37.3	32.1	23.4	11.0	17.8	18.1	18.0	18.0
Panama-1*	2008	16.3	8.7	14.5	4.6	0.0	3.4	4.3	4.3	4.3
Panama-2*	2010	10.9	8.0	10.2	3.1	0.0	2.4	5.0	4.8	4.9
Panama-3	2012	37.2	29.3	35.1	22.4	1.9	19.8	16.0	12.5	14.9
Panama-4	2014	25.1	13.6	21.6	24.8	11.3	21.8	17.2	9.3	14.9
Peru	2007	32.5	33.6	33.0	29.9	21.4	26.9	17.5	15.5	16.5
Philippines	2011	4.5	4.6	4.6	2.8	4.8	3.5	4.3	2.8	3.5
Togo*	2009	73.7	71.7	73.0	75.8	83.1	77.1	53.1	56.6	55.2
Uruguay*	2009	29.4	25.1	28.5	45.0	36.5	43.2	39.9	30.1	35.8
Viet Nam	2012	40.3	35.9	38.5	31.2	23.5	27.8	20.4	17.0	18.7
Yemen	2010	38.7	44.6	40.8	38.7	44.6	40.8	44.5	55.3	50.0

Notes: (*)Information about work-related health problems is provided by children.
Source: Calculations based on national household survey datasets (see Table 1).

While information reported above at the sector (1-digit) level makes clear that the health impact of work is by no means homogenous across sectors, information at this level is by definition too general for insight into the relative health risks of specific types of work tasks performed by children. Information on children's work decomposed at least at the 2-digit sector level, and preferably at the 3- or even 4-digit level, is instead required in order to draw meaningful conclusions in this regard. Unfortunately, the sample sizes used in most household surveys make it difficult to generate statistically significant estimates at the 2-digit or higher level of decomposition, as discussed in more detail in Panel 3. Other instruments, e.g., sector-specific surveys targeting the sector of interest, or other surveys in which the sector of interest is oversampled, are needed for reliable information at the sub-sector level.

Figure 10.
The incidence of health problems associated with children's work also varies according to whether or not the work takes place within the family unit

Percentage of children in employment experiencing work-related health problems, age group 5-17 years, by status of employment and sex

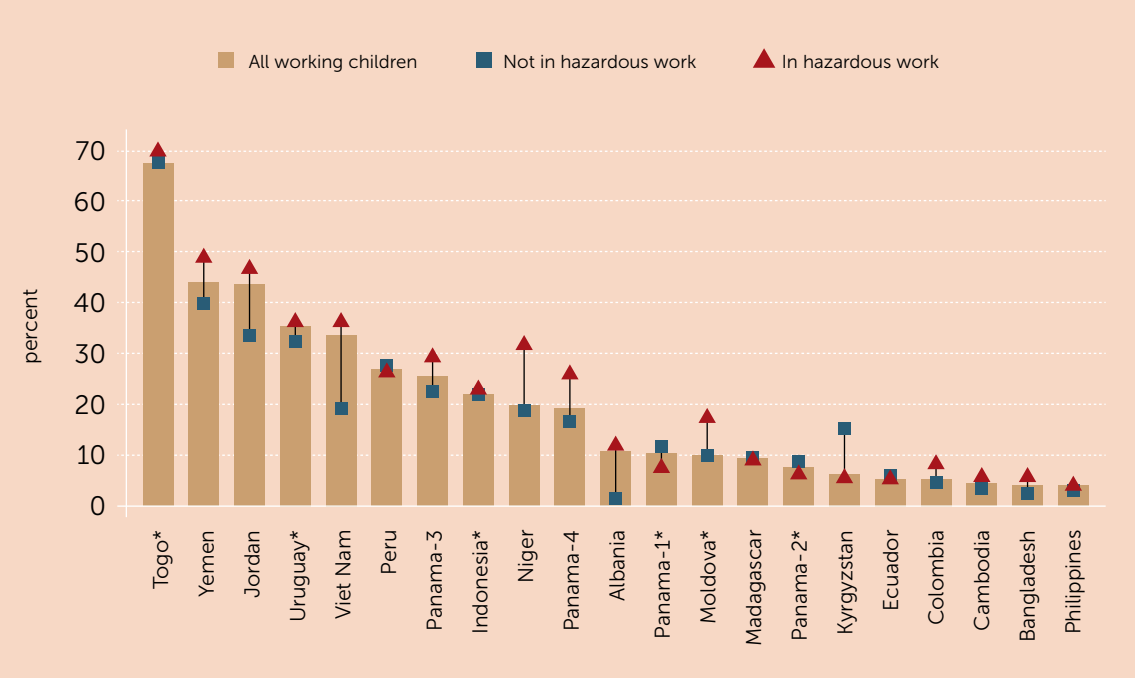


Notes: (*)Information about work-related health problems is provided by children.
Source: Calculations based on national household survey datasets (see Table 1).

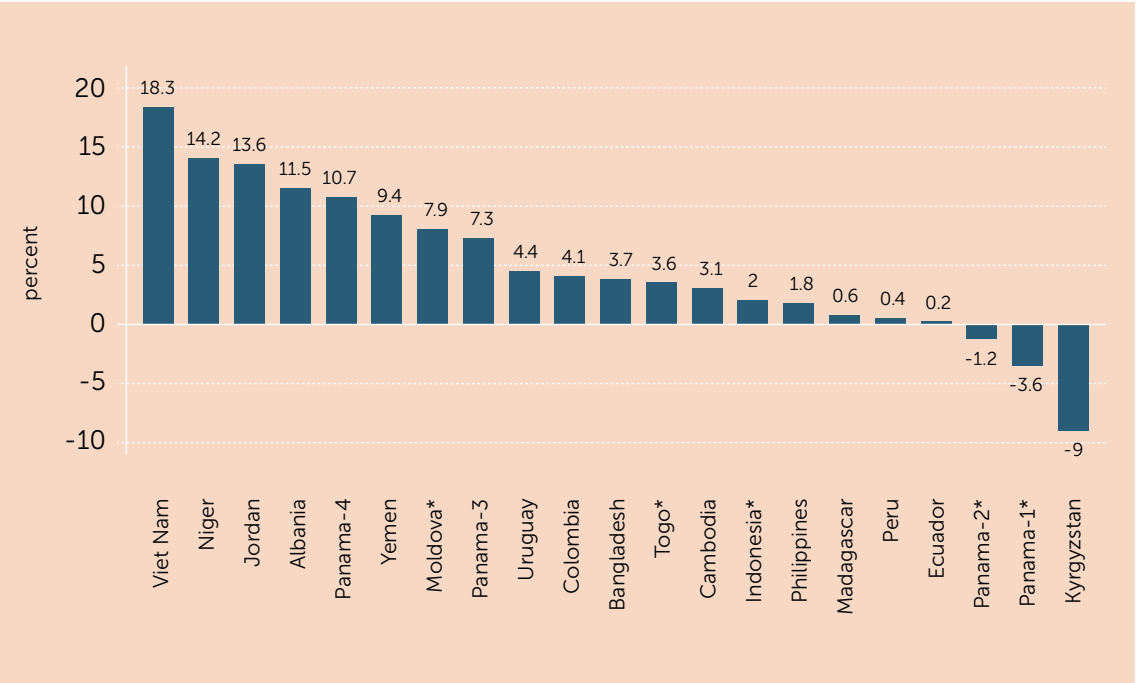
The health consequences of children's work also appear to vary in some countries depending on whether or not the work takes place within the family unit. As reported in Figure 10, in the countries where differences in this regard are most pronounced, i.e., Albania, Kyrgyzstan, Moldova, Niger and Uruguay, work in *non*-family contexts is consistently associated with higher work-related health problems. Family work, however, is not always associated with better workplace safety – in Togo, Peru, Panama, and Madagascar, for example, the incidence of health problems caused by work is *higher* among children working for their own families, even if the difference is not always large. Taking this point concerning family work a step further, in all but a few of the countries, the incidence of work-related health problems in family contexts is high regardless of where it stands with respect to work in other environments. The common perception that the family offers children a safe work environment is clearly *not* supported by the data.

Figure 11.
Hazardous forms of work are associated with greater health problems than other forms of work in most contexts

(a) Percentage of children in employment experiencing work-related health problems, age group 5-17 years, by sex



(b) Percentage point difference in terms of incidence of work-related health problems between hazardous and in non-hazardous work

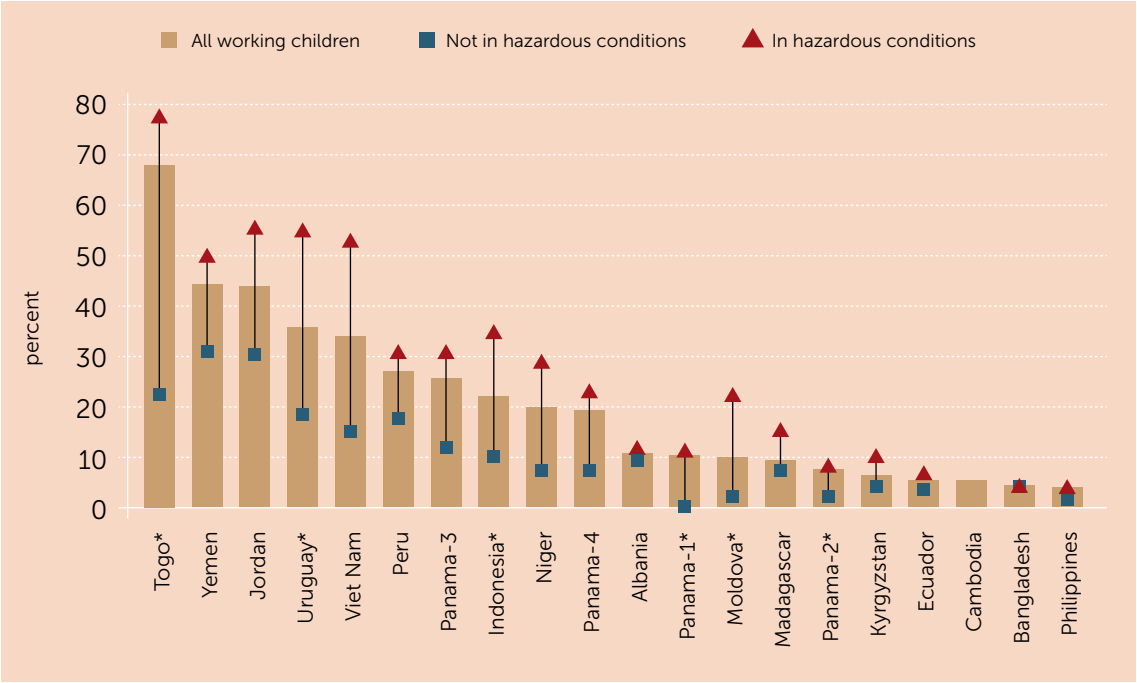


Notes: (*)Information about work-related health problems is provided by children.
Source: Calculations based on national household survey datasets (see Table 1).

Hazardous forms of work are associated with higher health risks than other forms of work across almost all countries, underscoring the importance of prioritising hazardous work in global efforts against child labour. Figure 11a reports the incidence of work-related health problems for hazardous work and for other work while Figure 11b reports the percentage point differences in this regard.[6] Hazardous work is defined following the approach used by ILO in its global estimates exercise, i.e., children working in designated hazardous industries and hazardous occupations (irrespective of working hours) and children working more than 43 hours per week. As shown, the incidence of work-related health problems is higher for hazardous work in all countries except Kyrgyzstan,[7] although the differences in this regard are not always large. This pattern holds for both male and female working children (Table A8 in the Annex).

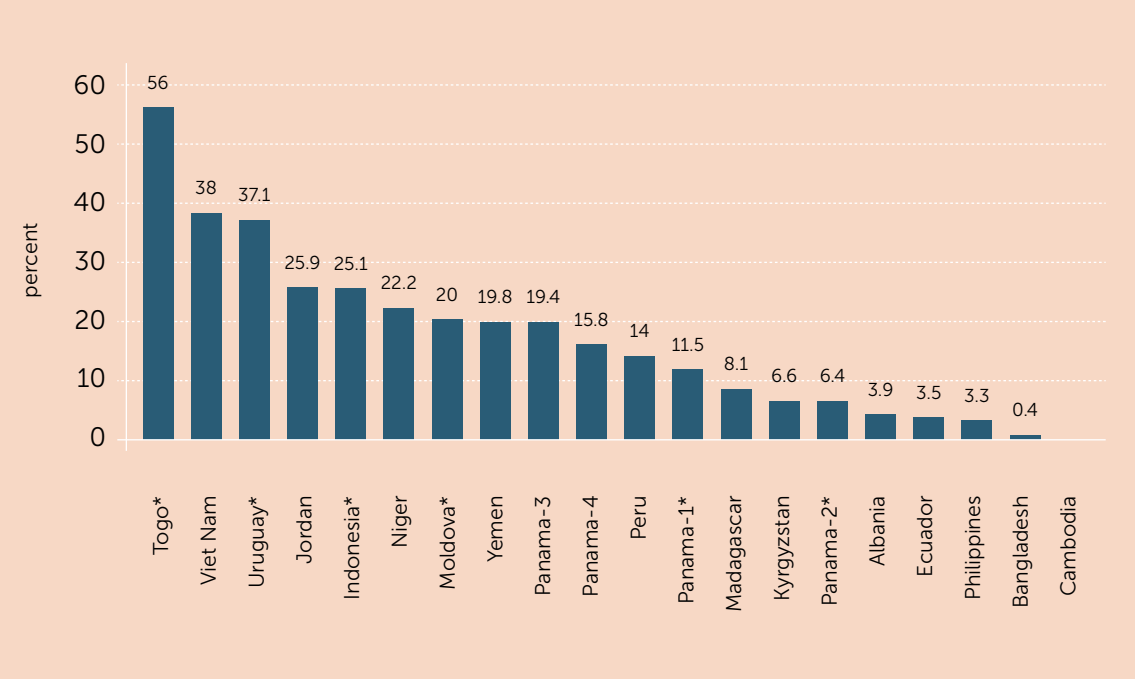
Figure 12.
Children's exposure to hazardous conditions in the workplace correlates even more closely to work-related health problems

(a) Percentage of children experiencing work-related health problems, age group 5-17 years, by exposure to hazardous conditions in the workplace



6 A positive value indicates that the percentage of children in hazardous work reporting work-related injuries or ill-health is higher than that of children involved in non-hazardous activities.
7 Incidence of work-related health problem also results as higher for non-hazardous work in the first two rounds (i.e., 2008 and 2010) of the *Encuesta de Trabajo Infantil* (ETI) in Panama, but this pattern is reversed in the subsequent two rounds (i.e., 2012 and 2014) of the same survey.

(b) Percentage point difference in incidence of work-related health problems between working children facing workplace hazards and working children not facing workplace hazards



Notes: (*)Information about work-related health problems is provided by children.
Source: Calculations based on national household survey datasets (see Table 1).

A number of surveys also collect information on exposure to hazardous *conditions* in the workplace (irrespective of the industry or occupational classification), offering another lens through which to view the health risks of children's work. Hazardous conditions vary somewhat from survey to survey, but include work at night, work on bodies of water, underground work, work at height and work involving carrying heavy loads. Workplace hazards also include dust, fumes, smoke, gases, fire, flames, loud noise or vibration, extreme temperatures or humidity, insufficient lighting or ventilation, dangerous objects, chemicals and explosives. Finally, hazardous conditions extend to treatment at work, and particularly workplace physical and sexual abuse.

Children's exposure to hazardous *conditions* in the workplace correlates even more closely to work-related health problems. As reported in Figure 12a, health problems are higher among working children exposed to hazardous conditions compared to other working children in almost all countries, and, as reported in Figure 12b, differences in this regard are often very large. In Togo, for instance, there is a 56 percentage point difference in incidence of work-related health problems between children exposed to hazardous conditions and other working children. In Viet Nam, the difference is 38 percentage points and in Uruguay, 37 percentage points. This correlation between work hazards and health problems holds for both male and female children in the countries looked at (Table A12 in the Annex).

By no means all children exposed to hazardous conditions, however, report incurring health problems, even in the countries where reported health problems are highest. It should be stressed that this does *not* necessarily mean that the children who remain healthy are immune to the effects of the hazardous conditions, as it is possible, indeed, even probable, that health problems will

emerge in the future with further exposure to the hazardous conditions. It should also be recalled that we capture only children who are *currently* working, and not children have had to stop working as a result of health problems relating to the hazardous conditions they faced in the workplace.

4.2 Incidence density rate for work-related health problems

The incidence density rate gives an indication of the risk of being injured faced by working children.

The standard *incidence density rate* is computed as follows:

$$\textit{Incidence density rate} = \frac{\textit{(no. of children injured during a specified period of time (T))}}{\textit{(total person time)}} \quad (1)$$

where "total person time" is the total hours worked during a specified period of time - or the cumulated exposure for all children considered. We must assume, however, constant weekly hours of work for the whole reference period (assumed to be one year). This is because the surveys instruments usually ask for working hours during the week preceding the survey, or the average weekly hours during a usual week of work.

In addition, as the recall period (e.g., last week, last month or last year) used in the questions on health problems is different for some countries, and the information on working period (e.g., number of weeks per months or number of months per year) is not available for all surveys, we had to make some assumptions in calculating the person time.

Table 6 details the approach used to calculate the "total person time" for each survey. For example, in the case of Albania, the survey collected information on hours per week and on the number of months worked per year. The person time is calculated by multiplying the "weekly working hours" by the number of weeks in a month (i.e., 4.3) to obtain monthly working hours, and then by multiplying monthly working hours by the number of months worked per year.

Table 6.
Calculation of the total person time

Country	Year	Health problems occurrence					Health problems frequency (cases for the given period) (f)	Intensity of work					Total person time
		Past wk.	Past 2 wks.	Past 4 wks.	Past mth.	Past yr.		Hours per week (a)	Hours per day (b)	Days per months (c)	Weeks per month (d)	Months per year (e)	
Albania[α]*	2010					x		x				x	(a)x4.3x(e)
Bangladesh[α]	2013					x	x	x					(a)x4.3x12/(f)
Cambodia[α]	2012					x		x					(a)x4.3x12
Colombia[α]	2011					x		x				x	(a)x4.3x(e)
Ecuador[α]	2012					x	x	x				x!	(a)x4.3x12/(f)
El Salvador	2013				x			x					(a)x4.3
Indonesia[α]**	2009					x		x					(a)x4.3x12
Jordan[α]*	2007					x		x				x	(a)x4.3x(e)
Kyrgyzstan[α]*	2007					x		x				x	(a)x4.3x(e)
Madagascar[α]*	2007					x		x				x	(a)x4.3x(e)
Malawi	2010		x					x					(a)x2
Moldova[α]*	2009					x		x					(a)x4.3x12
Niger[α]*	2009					x		x				x	(a)x4.3x(e)
Peru[α]*	2007					x		x				x	(a)x4.3x(e)
Senegal	2011			x				x					(a)x4
Togo[α]*+	2009					x		x				x	(a)x4.3x(e)
Uganda-1	2005				x			x					(a)x4.3
Uganda-2	2011				x			x			x!		(a)x4.3
Uruguay[α]*	2009					x		x					(a)x4.3x12
Viet Nam-1	2006			x					x	x			(b)*(c)
Viet Nam-2[α]	2012	x						x					(a)
Yemen[α]*	2010					x		x				x	(a)x4.3x(e)

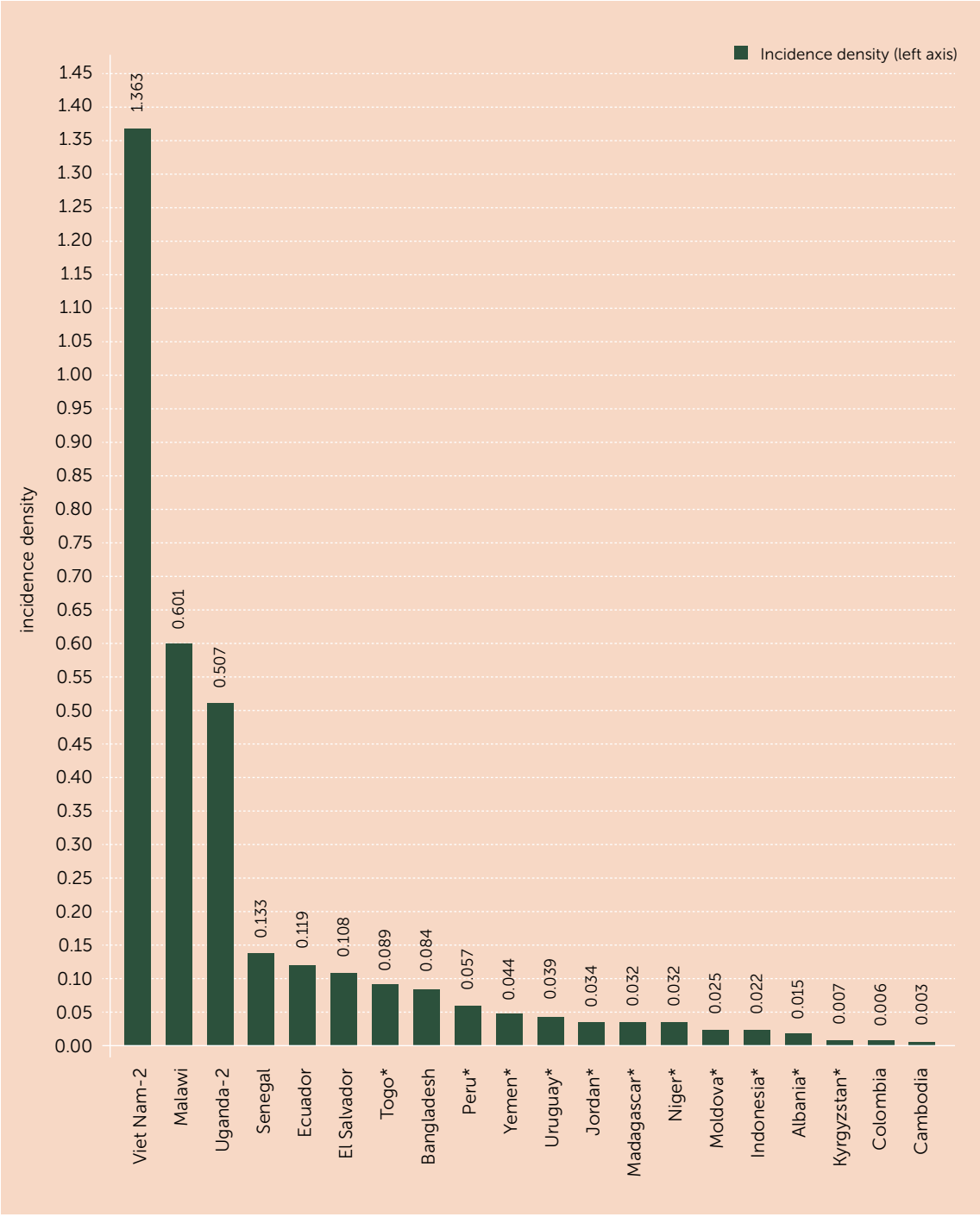
Notes: [α] Health problems due to employment; (*) Information about health is given by a child; (!) Information not used because of the large number of missing values
Source: Calculations based on national household survey datasets (see Table 1).

For countries where the number of working months per year is *not* available, the calculation of the incidence density requires some strong further assumptions. In this case, the only exposure measure available is the average hours worked during the reference week, while the recall period of ill-health problems is either the past year, the past month or the past two weeks. Given this information structure, we have computed incidence density for these countries taking individual exposure as the average hours worked during the reference week and assuming the individual worked for the whole year. This amounts to assuming that hours worked during the last year are proportional, for each individual, to the hours worked during last week.

Figure 13 reports the incidence density rates for work-related ill-health. Viet Nam has by far the highest incidence density rate of work-related ill-health, highlighting the high risk of being injured faced by working children. Malawi and Uganda rank second and third-highest in terms of incidence density.

Figure 13.
The incidence density rate provides a view of the relative health risk of children's work across countries

Incidence density rate of disease and injury,[a] by sex, 5-17 year-olds (the incidence density rate presented is multiplied by 100)



Notes: (a) We report the incidence density rate multiplied by 100; For Viet Nam and Uganda only the results of most recent avaialble data are reported; (*) Information about health is given by a child.
Source: Calculations based on national household survey datasets (see Table 1).

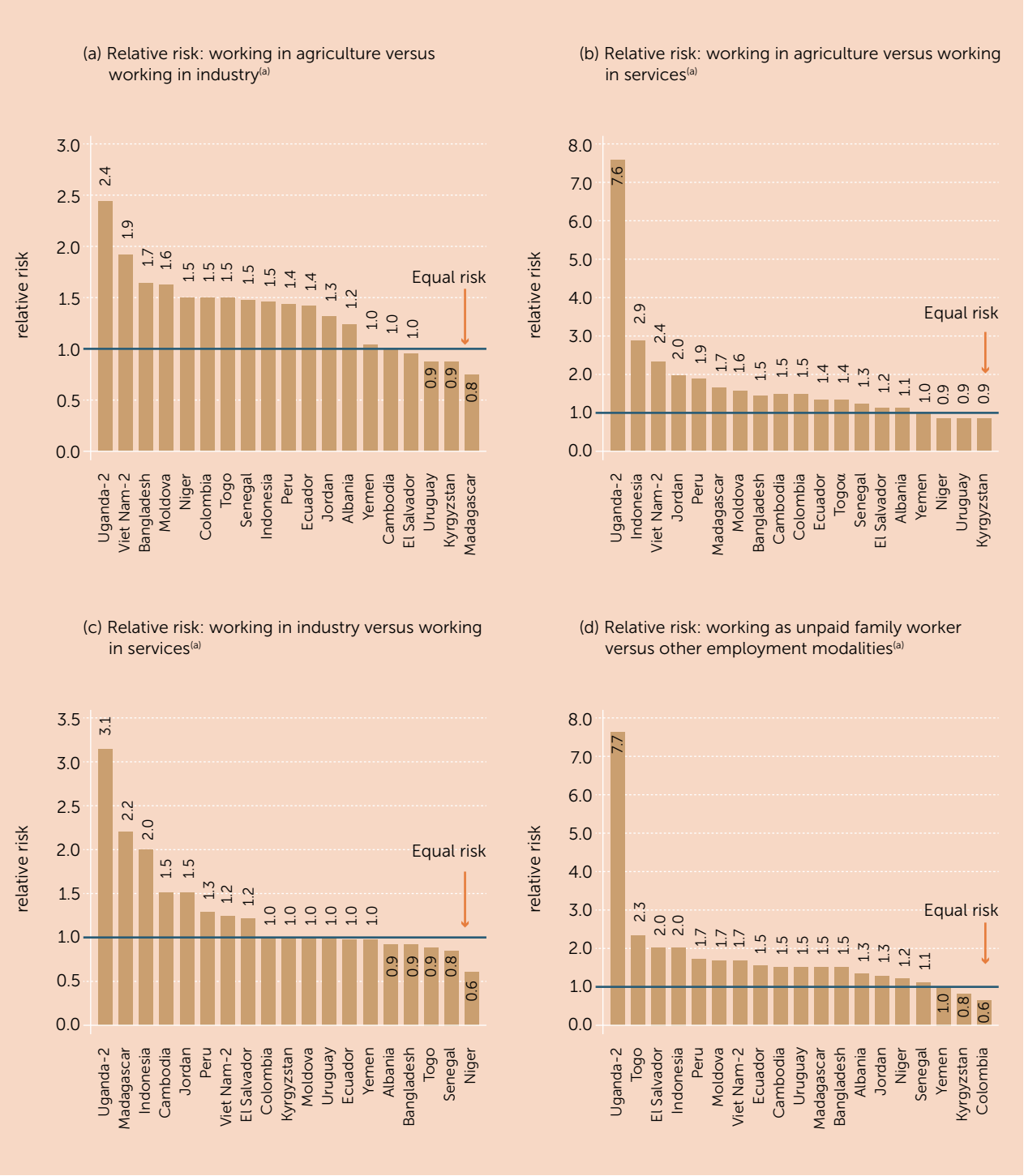
Within countries, the use of the incidence density indicator allows us to compare the health risks faced by children working in different sectors (or status categories) in more precise terms. We undertake this comparison by dividing the incidence density rate of ill-health in one sector (or status category) with that of another sector (or status category), yielding a simple value of relative risk.[8] The results, reported in Figure 14, point to a considerable variable in the relative health risks associated with different types of children's work.[9]

Children's agricultural work appears to involve a rel atively greater risk of illness or injury. Work in agriculture is associated with higher incidence density rates than work in industry all but six of the 19 countries where data are available (Figure 14a) and with higher incidence density rates than work in services in all but four of the countries (Figure 14b). In many contexts, differences in this regard are very large. In Uganda, for example, the incidence density rate associated with agriculture is more than seven times higher than that for services and 2.4 times higher than that for industry. In Viet Nam, the relative risk associated with agricultural work is almost twice as high as that associated with industry work and two and half times higher that than associated with services work. In the few instances where the relative risk associated with agricultural work is *lower* than in services and industry, on the other hand, differences in this regard are generally small.

8 A value of greater than one indicates that the health risk associated with work in the first sector (or status category) is greater than the risk associated with work in the second sector (or modality).
9 This comparison is undertaken by simply dividing the incidence density rate of ill-health in one sector (or status category) with that of another sector (or status category), yielding a simple value of relative risk.

Figure 14.

There is considerable variation in the relative health risk associated with work in different sectors and with different work modalities



Notes: (a) Relative risk is calculated as the incidence density of work-related ill-health of the first sector (or modality) divided by the incidence density of the second sector (or modality). A value of greater than one, therefore, indicates that the health risk associated with work in the first sector (or modality) is greater than the risk associated with work in the second sector (or modality).
Source: Calculations based on national household survey datasets (see Table 1).)

Variations in the relative risk associated with children's work in industry vis-à-vis work in services appear less pronounced. As reported in Figure 14c, work in industry is riskier than work in services in eight of the countries, but the risks are virtually the same in four other countries and are actually slightly higher in services in the remaining five countries. These sectors, however, are defined in very broad terms; more precise conclusions concerning relative risks require detailed information at the sub-sectoral (i.e., two- or three-digit) level of disaggregation. Unfortunately, the sample sizes, and, concomitantly, the numbers of observations, are too small in the survey datasets to yield reliable estimates of incidence density beyond the one-digit level of disaggregation (see also Panel 3).

Perhaps the most striking result of the simple comparisons of risk is the high relative risk associated with family-based work. As reported in Figure 14d, the incidence density rate of ill-health for family-based work is higher than that for other work modalities (i.e. wage work and self-employment) in all but three of the countries. Moreover, the differences in this regard are often very large. Family-based work is more than seven times riskier in Uganda, is twice as risky in Togo, El Salvador and Indonesia, and is at least 1.5 times riskier in Moldova, Viet Nam, Ecuador, Cambodia, Uruguay, Madagascar and Bangladesh.

These figures clearly belie the conventional wisdom that the family is a more protective work environment for children. Indeed, if anything, they suggest that the opposite might be true. It should be noted, however, that many of the worst forms of non-family child labour, e.g., street work, commercial sexual exploitation, trafficking, involvement in illicit activities, are beyond the scope of the surveys used in this Report. It is possible, therefore, that the results presented here overstate the health risks associated with family work relative to those associated with work outside the family.

Taken together, the information on the relative health risks presented in this section suggest that the most common types of children's work, i.e., agricultural work and work performed in the family context, two categories which often overlap, also present the highest risk of work-related ill-health. This result lends added importance to addressing children in family-based agriculture in the global fight against child labour: this group is important not only in numerical terms but also because their work appears especially compromising to their health.

5. Discussion and considerations for future research

The partial picture formed by the statistics presented in the preceding sections suggests that work-related health problems are very common for child labourers, lending additional urgency to worldwide child labour elimination efforts. Whether measured on the basis of general prevalence or of incidence density, child labourers clearly suffer adverse health consequences resulting from their involvement in work, although the statistics also show that the variation across and within countries in this regard is very large. Based on findings from this study, the most common form of children's work - family-based agriculture – appears to present the greatest health risk relative to other forms of employment.

But the preceding discussion has also highlighted the limited availability of data that allows for a causal analysis of children's work and health. A substantial share of child labour surveys contains no information on children's health at all, while many others contain information only on children's general health, rather than work-related health. As a result, there is still limited evidence about the health consequences of children's work in many national contexts. Even among the surveys containing health data, almost none permit reliable estimates of ill-health at the detailed employment sector or occupation level, due to limited sample sizes and the resukting high confidence intervals. Data on specific workplace hazards - another factor critical to assessing risk - are also frequently missing. Finally, the surveys offer little insight into the severity of reported health problems or into exposure duration, information that is at least as important as prevalence.

Other measurement issues also make it difficult to disentangle the relationship between work and health from the existing child labour survey instruments. As discussed in Section 3, these surveys do not allow for the consideration of possible selection bias, i.e., of healthier children being relatively more likely to be selected by their families for work, or for the consideration of bias arising from simultaneity, i.e., the fact that a child experiencing an episode of illness or injury at the time of the survey may simply not be able to work. They also do not account for the possibility that the health effects of work show up only later in the lifecycle. In terms of survey design, there is little consistency across surveys regarding reference and recall periods, limiting the comparability of survey results. In terms of survey implementation, there are unresolved questions concerning whether children responding for themselves or adults responding for them provide the most accurate reflection of children's work-related ill-health.

These knowledge gaps underscore the importance further research in area of children's work and health for informed policy responses.

Where should future research efforts be directed? The ILO Encyclopaedia of Occupational Health and Safety offers one useful starting point. The Encyclopaedia, involving inputs from a network of more than 2,000 specialists from over 65 countries, is the most comprehensive reference source on the subject of occupational safety and health. While the Encyclopaedia does not specifically relate to child labour, children are of course most vulnerable to the occupational health and safety risks identified in it. If future research efforts were to focus on generating much more precise information about the activities performed by children in the workplace, this information could be then be matched with existing information from the encyclopaedia and elsewhere on the health consequences of these activities. The information on children's workplace activities could be collected in smaller, targeted studies.

Such a strategy would permit a much clearer picture of the nature of children's work and of its likely health consequences, in turn critical to the design and targeting of child labour elimination efforts moving forward. In addition, in order to make the information on children's work activities more relevant in policy terms, it will be important that the hazardous work lists identified by governments match as far as possible the statistical information that can be collected.

Annex: Additional statistics

General health status and work

Table A1. Percent of children aged 5-17 years reporting health problems, by employment status and sex

Country	Year	Not in employment			In employment			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
El Salvador	2013	12.2	12.5	12.4	13.2	12.7	13.1	12.4	12.5	12.4
Malawi	2010	14.6	16.0	15.3	10.0	12.0	11.0	13.4	15.0	14.2
Senegal	2011	18.5	19.3	18.9	21.6	24.6	22.6	19.0	19.8	19.4
Uganda-1	2005	33.0	32.3	32.6	28.7	30.9	29.7	31.4	31.8	31.6
Uganda-2	2011	22.8	25.2	24.1	22.0	19.3	20.7	22.5	22.9	22.7
Viet Nam	2006	14.4	14.3	14.4	10.9	12.2	11.5	13.9	14.1	14.0

Source: Calculations based on national household survey datasets (see Table 1).

Table A2. Percent of working children aged 5-17 years reporting health problems, by involvement in the hazardous work[a] and sex

Country	Year	In hazardous work			Not in hazardous work		
		Male	Female	Total	Male	Female	Total
El Salvador	2013	15.0	14.9	15.0	12.6	8.4	11.9
Malawi	2010	10.0	12.1	11.0	12.2	10.6	11.6
Senegal	2011	22.1	25.0	23.3	21.3	23.2	21.8
Uganda-1	2005	9.4	30.5	29.9	21.6	27.7	23.6
Uganda-2	2011	21.7	20.6	21.2	18.5	3.4	12.9
Viet Nam	2006	13.7	28.8	20.6	10.9	12.0	11.4

Notes: (a) A child is defined to be involved in hazardous work if he/she works in hazardous industry or hazardous occupation, or works for 43 or more hours per week.
Source: Calculations based on national household survey datasets (see Table 1).

Table A3. Percent of working children aged 5-17 years reporting health problems, by work in hazardous conditions[a] and sex

Country	Year	Not in hazardous conditions			In hazardous conditions		
		Male	Female	Total	Male	Female	Total
El Salvador	2013	15.9	10.5	13.2	12.7	14.5	13.1
Malawi	2010	n/a	n/a	n/a	n/a	n/a	n/a
Senegal	2011	n/a	n/a	n/a	n/a	n/a	n/a
Uganda-1	2005	n/a	n/a	n/a	n/a	n/a	n/a
Uganda-2	2011	n/a	n/a	n/a	n/a	n/a	n/a
Viet Nam	2006	n/a	n/a	n/a	n/a	n/a	n/a

Notes: (a) Hazardous conditions of employment may vary from survey to survey and comprise work during night; carrying heavy loads; work in water bodies; work underground or at height; being exposed to dust, fumes, smoke, gases, fire, flames, loud noise or vibration, extreme temperature or humidity, insufficient lighting or ventilation, dangerous objects, chemicals, explosives; and etc.; beating; physical hurt; sexual abuse.
Source: Calculations based on national household survey datasets (see Table 1).

Table A4. Percent of working children aged 5-17 years reporting health problems, by sector and sex

Country	Year	Agriculture			Industry			Services		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
El Salvador	2013	13.4	9.7	13.2	11.2	13.8	12.2	13.8	12.9	13.3
Malawi	2010	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Senegal	2011	22.5	26.3	23.6	15.9	22.7	16.7	21.0	19.9	20.3
Uganda-1	2005	29.1	31.0	30.0	25.6	39.0	31.1	26.4	30.3	28.5
Uganda-2	2011	22.4	19.8	21.2	21.6	36.9	24.6	8.4	3.9	5.9
Viet Nam	2006	10.7	12.0	11.3	11.4	10.1	10.8	11.7	16.0	14.2

Source: Calculations based on national household survey datasets (see Table 1).

Table A5. Percent of working children aged 5-17 years reporting health problems, by status in employment and sex

Country	Year	Unpaid family work			Other employment		
		Male	Female	Total	Male	Female	Total
El Salvador	2013	15.2	13.8	14.7	10.2	10.1	10.2
Malawi	2010	n/a	n/a	n/a	n/a	n/a	n/a
Senegal	2011	21.4	23.6	22.2	22.1	26.4	23.6
Uganda-1	2005	29.1	31.5	30.3	26.4	23.8	25.3
Uganda-2	2011	22.2	19.5	21.0	16.4	8.5	13.3
Viet Nam	2006	n/a	n/a	n/a	n/a	n/a	n/a

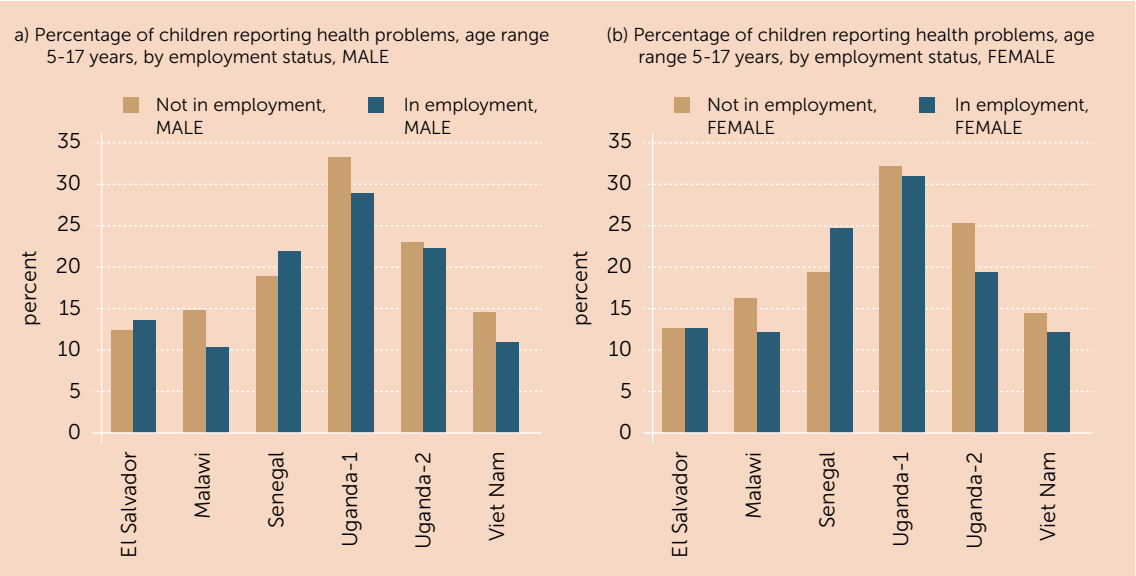
Source: Calculations based on national household survey datasets (see Table 1).

Table A6. Percent of working children aged 5-17 years reporting health problems, by involvement in child labour[a] and sex

Country	Year	Not in child labour			In child labour		
		Male	Female	Total	Male	Female	Total
El Salvador	2013	12.6	14.4	13.5	13.4	11.6	13.0
Malawi	2010	8.5	10.2	9.3	11.4	14.3	12.8
Senegal	2011	20.4	27.2	23.6	21.9	23.4	22.4
Uganda-1	2005	27.0	28.9	27.9	30.2	32.7	31.3
Uganda-2	2011	16.1	19.7	17.9	26.1	20.2	23.6
Viet Nam	2006	15.3	53.1	28.2	10.9	11.9	11.4

Notes: (a) Child labour comprises all children aged 5-11 years in employment; children aged 12-14 in hazardous work or working for 14 or more hours per week; children aged 15-17 years in hazardous work or working for 43 or more hours per week.
Source: Calculations based on national household survey datasets (see Table 1).

Figure A1. Working children are not consistently less healthy than their non-working counterparts



Notes: (a) Uganda-1 refers to the 2005 reference period and Uganda-2 to the 2011 reference period.
Source: Calculations based on national household survey datasets (see Table 1).

Work-related health problems

Table A7. Percent of children aged 5-17 years reporting work related injuries\ill-health, by status in employment and sex

Country	Year	Unpaid family work			Other employment		
		Male	Female	Total	Male	Female	Total
Albania	2010	10.1	6.7	8.7	36.8	12.1	30.5
Bangladesh	2013	2.7	3.3	3.0	6.1	2.7	4.9
Cambodia	2012	3.0	3.5	3.2	6.3	6.3	6.3
Colombia	2011	2.9	3.3	3.0	9.0	4.5	7.8
Ecuador	2012	4.8	4.2	4.6	8.1	6.6	7.7
Indonesia*	2009	22.7	20.2	21.6	28.0	15.9	23.0
Jordan	2007	39.0	50.7	41.5	44.3	50.7	44.6
Kyrgyzstan	2007	6.7	3.5	5.3	23.3	22.7	23.1
Madagascar	2007	10.8	9.2	10.1	6.3	8.2	7.2
Moldova*	2009	10.4	8.1	9.4	22.0	18.6	21.0
Niger	2009	20.3	17.5	18.8	29.8	26.8	28.6
Panama-1*	2008	15.2	6.9	12.7	7.5	5.3	7.0
Panama-2*	2010	10.7	6.6	9.4	5.9	5.6	5.9
Panama-3	2012	27.7	23.3	26.1	27.6	14.5	25.2
Panama-4	2014	19.5	11.3	16.5	25.4	13.7	23.2
Peru	2007	28.2	28.0	28.1	25.8	15.0	21.7
Philippines	2011	3.2	3.1	3.1	6.1	4.2	5.5
Togo*	2009	69.5	66.2	68.1	72.9	57.8	66.6
Uruguay*	2009	26.2	28.2	26.9	43.0	31.0	39.2
Viet Nam	2012	34.7	29.3	32.3	40.8	34.7	38.3
Yemen	2010	38.5	48.8	43.3	48.9	50.7	49.1

Notes: (*)Information about work-realted health problems is provided by a child.
Source: Calculations based on national household survey datasets (see Table 1).

Table A8. Percent of children aged 5-17 years reporting work related injuries\ill-health, by involvement in the hazardous work[a] and sex

Country	Year	Not in hazardous work			In hazardous work		
		Male	Female	Total	Male	Female	Total
Albania	2010	0.9	1.3	1.1	15.4	8.2	12.6
Bangladesh	2013	2.4	2.2	2.3	7.6	3.2	6.0
Cambodia	2012	3.0	2.9	3.0	5.6	6.5	6.1
Colombia	2011	5.1	3.2	4.4	9.3	5.8	8.5
Ecuador	2012	6.5	4.4	5.6	6.2	5.1	5.8
Indonesia*	2009	22.9	20.8	22.0	27.7	18.1	24.0
Jordan	2007	33.1	36.5	33.9	45.8	75.4	47.5
Kyrgyzstan	2007	13.5	17.0	15.0	7.6	4.0	6.0
Madagascar	2007	8.7	9.4	9.2	10.3	9.1	9.8
Moldova*	2009	10.6	8.6	9.8	21.9	4.3	17.7
Niger	2009	18.8	18.3	18.5	38.5	20.7	32.7
Panama-1*	2008	13.7	6.9	11.5	8.7	3.6	7.9
Panama-2*	2010	8.5	7.2	8.2	8.0	1.6	7.0
Panama-3	2012	23.5	21.3	22.7	32.1	14.0	30.0
Panama-4	2014	18.2	12.3	15.9	28.4	9.2	26.6
Peru	2007	27.7	26.2	27.0	29.1	24.3	27.4
Philippines	2011	3.4	2.4	2.9	4.7	4.7	4.7
Togo*	2009	68.8	67.1	68.0	77.5	59.5	71.6
Uruguay*	2009	38.9	27.3	32.6	38.1	33.3	37.0
Viet Nam	2012	20.0	17.8	18.9	39.1	34.5	37.2
Yemen	2010	37.7	45.3	40.4	47.3	52.9	49.8

Notes: (a) A child is defined to be involved in hazardous work if he/she works in hazardous industry or hazardous occupation, or works for 43 or more hours per week; (*)Information about work-related health problems is provided by children.
Source: Calculations based on national household survey datasets (see Table 1).

Table A9. Percent of children aged 5-17 years faced with disease, injury and poor health problems due to their work, by involvement in child labour[a] and sex

Country	Year	Not in child labour			In child labour		
		Male	Female	Total	Male	Female	Total
Albania	2010	1.2	0.0	0.7	14.8	8.1	12.1
Bangladesh	2013	2.5	1.8	2.3	6.0	3.2	4.9
Cambodia	2012	3.4	3.5	3.5	4.7	5.2	4.9
Colombia	2011	6.3	3.5	5.3	5.7	3.5	5.0
Ecuador	2012	4.3	4.7	4.5	6.6	4.9	6.0
Indonesia*	2009	22.5	21.0	21.9	26.1	19.0	23.1
Jordan	2007	35.7	28.0	34.0	43.8	64.5	45.5
Kyrgyzstan	2007	12.8	15.2	13.9	7.7	4.2	6.1
Madagascar	2007	7.8	12.5	10.6	10.3	8.8	9.6
Moldova*	2009	10.7	9.1	10.0	12.2	6.6	10.4
Niger	2009	18.2	16.7	17.4	23.2	18.7	20.9
Panama-1*	2008	15.2	6.3	12.4	9.8	6.5	9.0
Panama-2*	2010	7.3	8.6	7.6	9.6	4.1	8.2
Panama-3	2012	25.9	22.1	24.8	28.7	18.5	26.1
Panama-4	2014	17.7	13.8	16.3	25.7	9.5	21.9
Peru	2007	25.4	23.1	24.4	29.2	28.1	28.7
Philippines	2011	3.0	2.8	2.9	4.6	3.9	4.4
Togo*	2009	66.9	68.5	67.6	70.5	64.5	67.9
Uruguay*	2009	36.9	26.2	31.1	38.6	32.9	37.1
Viet Nam	2012	22.1	19.1	20.5	37.9	32.7	35.7
Yemen	2010	35.7	46.2	38.6	43.8	49.4	46.3

Notes: (a) Child labour comprises all children aged 5-11 years in employment; children aged 12-14 in hazardous work or working for 14 or more hours per week; children aged 15-17 years in hazardous work or working for 43 or more hours per week. The definition depends on the availability of information about industries, sectors and working hours for each survey; (*)Information about work-related health problems is provided by a child.
Source: Calculations based on national household survey datasets (see Table 1).

Table A10. Percent of working children aged 5-17 years reporting work related injuries/ill-health, by work in hazardous conditions[a] and sex

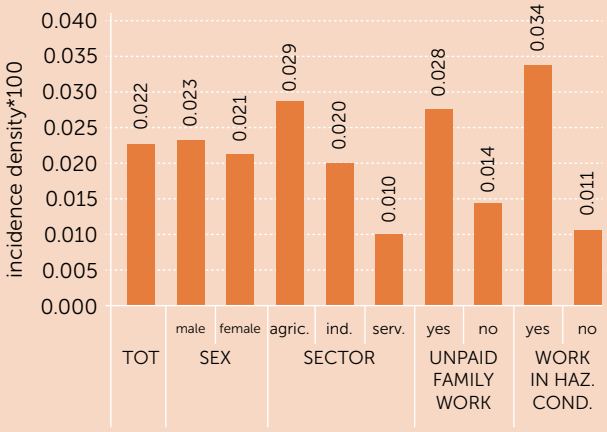
Country	Year	Not in hazardous conditions			In hazardous conditions		
		Male	Female	Total	Male	Female	Total
Albania+	2010	10.5	7.8	9.4	16.8	7.4	13.3
Bangladesh	2013	4.6	3.4	4.2	7.0	2.1	4.6
Cambodia	2012	n/a	n/a	n/a	n/a	n/a	n/a
Ecuador+	2012	4.4	2.9	3.8	7.5	7.0	7.3
Indonesia*+	2009	10.3	9.7	10.1	37.2	31.8	35.2
Jordan+	2007	30.1	32.7	30.5	54.3	83.5	56.4
Kyrgyzstan+	2007	4.9	3.5	4.2	12.8	7.5	10.8
Madagascar+	2007	7.9	7.5	7.7	17.0	14.3	15.8
Moldova*+	2009	2.7	1.8	2.3	22.5	21.7	22.3
Niger+	2009	9.3	5.6	7.3	30.5	28.4	29.5
Panama*+	2008	1.0	0.0	0.5	13.2	8.3	12.0
Panama*+	2010	2.6	1.9	2.3	9.1	7.5	8.7
Panama+	2012	11.8	11.9	11.9	32.1	28.2	31.3
Panama+	2014	8.8	5.5	7.6	26.3	15.3	23.4
Peru+	2007	19.5	16.2	17.7	31.6	31.9	31.7
Philippines	2011	1.3	1.9	1.6	5.0	4.5	4.9
Togo*+	2009	25.0	19.3	22.5	80.0	76.4	78.5
Uruguay*+	2009	19.1	17.3	18.3	54.5	58.5	55.4
Viet Nam	2012	16.8	13.9	15.5	54.9	51.4	53.5
Yemen+	2010	30.4	31.4	30.8	48.0	55.8	50.6

Notes: (a) Hazardous conditions of employment may vary from survey to survey and comprise work during night; carrying heavy loads; work in water bodies; work underground or at height; being exposed to dust, fumes, smoke, gases, fire, flames, loud noise or vibration, extreme temperature or humidity, insufficient lighting or ventilation, dangerous objects, chemicals, explosives; and etc.; beating; physical hurt; sexual abuse; (*)Information about work-related health problems is provided by children; and (+) Information about hazardous conditions is provided by a child.
Source: Calculations based on national household survey datasets (see Table 1).

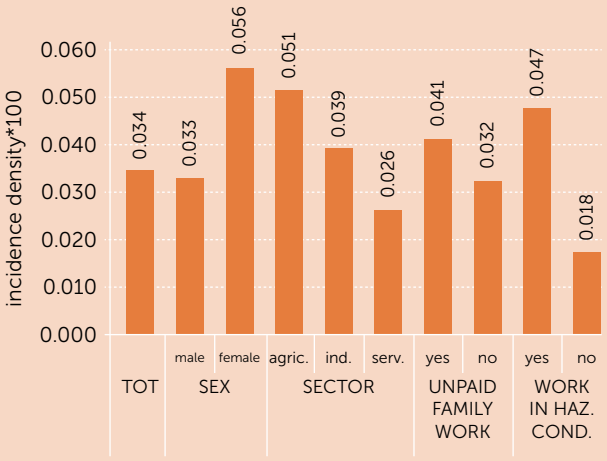
Incidence density rate

Figure 1. Incidence density rate of disease and injury,(a) by sex, sector, and family work, 5-17 year-olds (the incidence density rate presented is multiplied by 100)

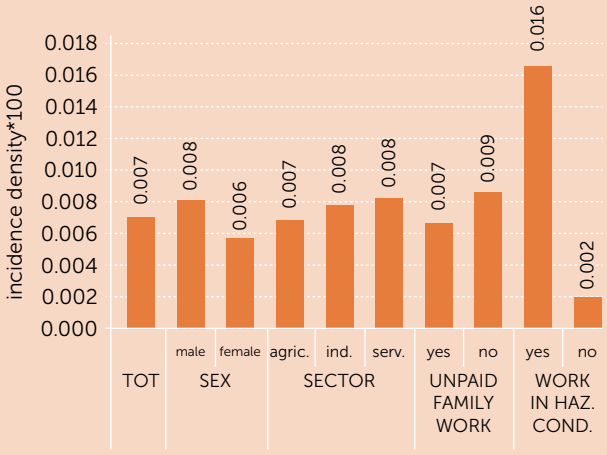
Indonesia[α*+] (2009)



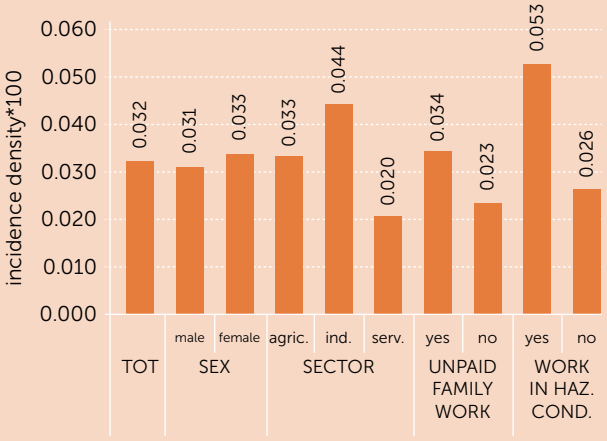
Jordan[α*+] (2007)



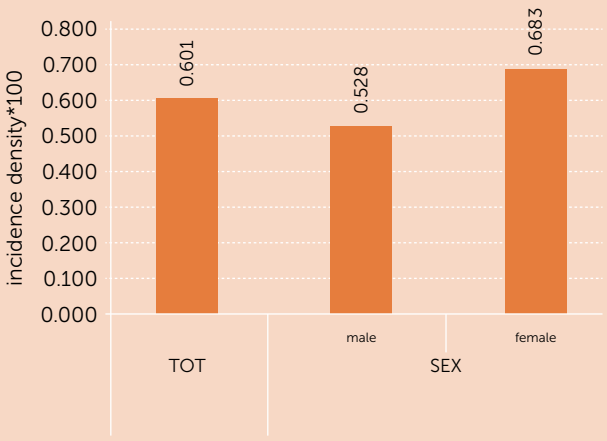
Kyrgyzstan[α*+] (2007)



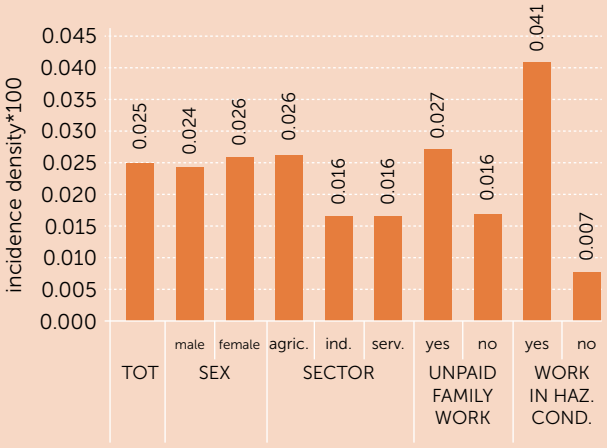
Madagascar[α*+] (2007)



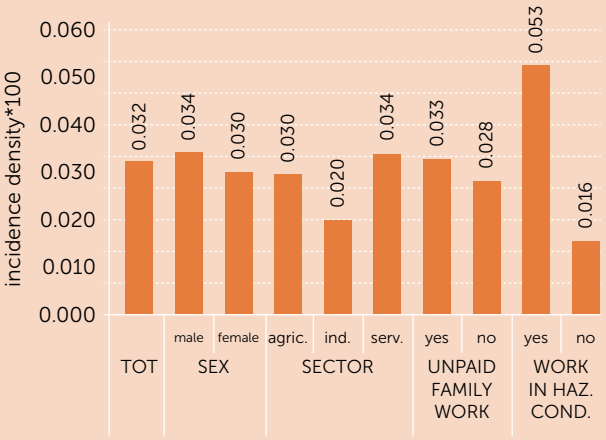
Malawi (2010)



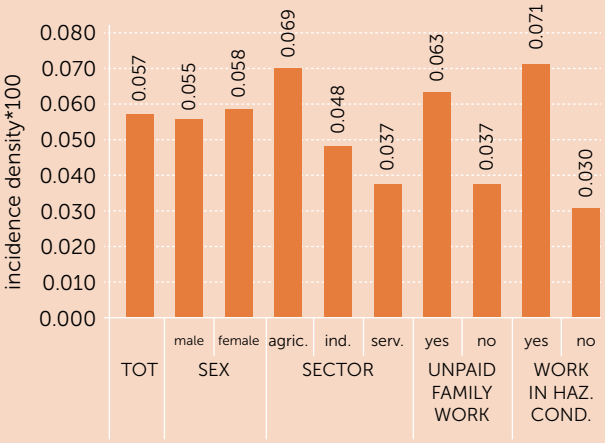
Moldova[α*+] (2009)



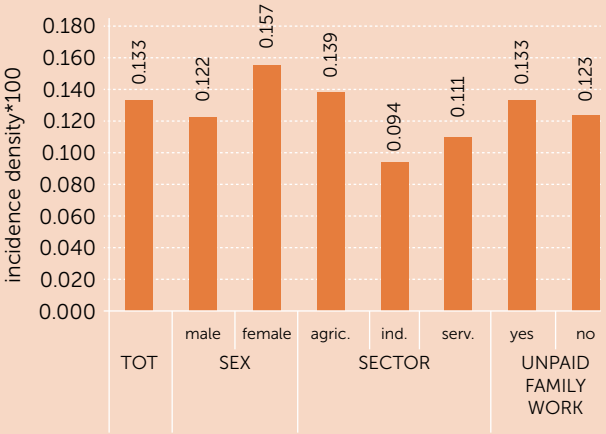
Niger[α*+] (2009)



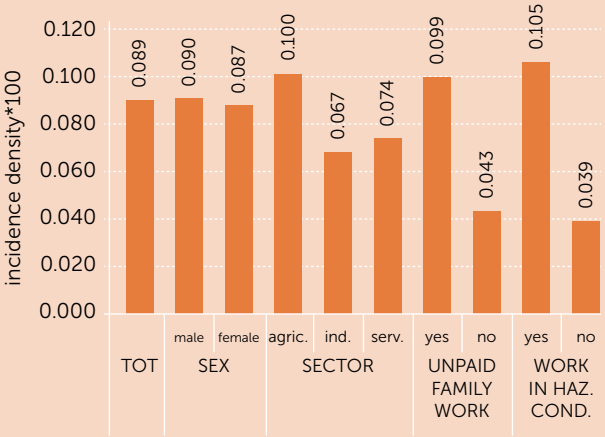
Peru[α*+] (2007)



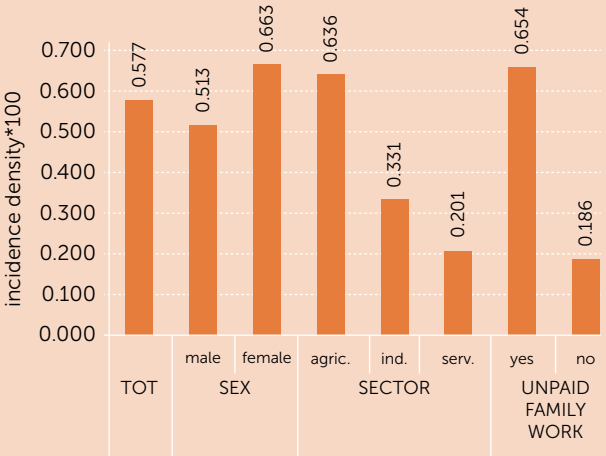
Senegal (2011)



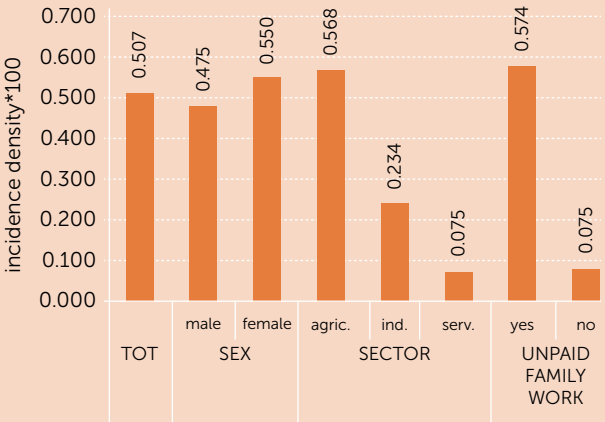
Togo[α*+] (2009)



Uganda (2005)



Uganda (2011)



Notes: (A) We report the incidence density rate multiplied by 100; (α) Health problems due to employment; (*) Information about health is given by a child; (+) Information about hazardous conditions is given by a child.
Source: Calculations based on national household survey datasets (see Table 1).

Table A11. Incidence density rate of disease and injury,[(a)] by sector and sex, 5-17 year-olds

Country	Year	Agriculture			Industry			Services		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Albania[α*]	2010	0.017	0.015	0.016	0.019	--	0.013	0.019	0.004	0.014
Bangladesh[α]	2013	0.111	0.119	0.114	0.075	0.055	0.069	0.095	0.043	0.076
Cambodia[α]	2012	0.003	0.002	0.003	0.004	0.002	0.003	0.003	0.001	0.002
Colombia[α]	2011	0.009	0.008	0.009	0.006	0.006	0.006	0.007	0.004	0.006
Ecuador[α]	2012	0.123	0.163	0.135	0.088	0.181	0.096	0.086	0.123	0.098
El Salvador	2013	0.114	0.099	0.113	0.100	0.166	0.118	0.091	0.103	0.098
Indonesia[α*]	2009	0.027	0.032	0.029	0.021	0.020	0.020	0.011	0.009	0.010
Jordan[α*]	2007	0.048	0.061	0.051	0.039	0.027	0.039	0.026	0.044	0.026
Kyrgyzstan[α*]	2007	0.008	0.005	0.007	0.005	0.012	0.008	0.008	0.009	0.008
Madagascar[α*]	2007	0.030	0.037	0.033	0.049	0.040	0.044	0.025	0.018	0.020
Malawi	2010	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Moldova[α*]	2009	0.025	0.027	0.026	0.017	0.011	0.016	0.023	0.010	0.016
Niger [α*]	2009	0.030	0.029	0.030	0.025	0.015	0.020	0.038	0.031	0.034
Peru[α*]	2007	0.066	0.075	0.069	0.043	0.060	0.048	0.039	0.036	0.037
Senegal	2011	0.127	0.169	0.139	0.088	0.129	0.094	0.104	0.116	0.111
Togo[α*]	2009	0.099	0.103	0.100	0.058	0.114	0.067	0.073	0.074	0.074
Uganda-1	2005	0.563	0.736	0.636	0.243	0.712	0.331	0.167	0.233	0.201
Uganda-2	2011	0.511	0.651	0.568	0.166	0.348	0.234	0.135	0.043	0.075
Uruguay[α*]	2009	0.035	0.037	0.035	0.038	0.054	0.040	0.040	0.039	0.040
Viet Nam-1	2006	0.109	0.127	0.117	0.067	0.059	0.063	0.067	0.075	0.072
Viet Nam-2[α]	2012	1.641	1.544	1.600	0.873	0.782	0.837	0.719	0.637	0.677
Yemen[α*]	2010	0.048	0.036	0.044	0.043	0.026	0.042	0.039	0.055	0.043

Notes: (a) We report the incidence density rate multiplied by 100; (α) Health problems due to employment; (*) Information about health is given by a child; (+) Information about hazardous conditions is given by a child.
Source: Calculations based on national household survey datasets (see Table 1).

Table A12. Incidence density rate of disease and injury,[(a)] by status in employment and sex, 5-17 year-olds

Country	Year	Unpaid family work			Other employment		
		Male	Female	Total	Male	Female	Total
Albania[α*]	2010	0.018	0.014	0.016	0.015	--	0.012
Bangladesh[α]	2013	0.110	0.120	0.115	0.089	0.049	0.078
Cambodia[α]	2012	0.003	0.002	0.003	0.003	0.002	0.002
Colombia[α]	2011	0.005	0.004	0.005	0.008	0.005	0.008
Ecuador[α]	2012	0.140	0.162	0.148	0.088	0.134	0.097
El Salvador	2013	0.137	0.143	0.138	0.069	0.070	0.069
Indonesia[α*]	2009	0.027	0.029	0.028	0.017	0.009	0.014
Jordan[α*]	2007	0.036	0.069	0.041	0.032	0.041	0.032
Kyrgyzstan[α*]	2007	0.008	0.005	0.007	0.007	0.011	0.009
Madagascar[α*]	2007	0.032	0.036	0.034	0.022	0.023	0.023
Malawi	2010	n/a	n/a	n/a	n/a	n/a	n/a
Moldova[α*]	2009	0.027	0.027	0.027	0.016	0.017	0.016
Niger [α*]	2009	0.035	0.031	0.033	0.030	0.024	0.028
Peru[α*]	2007	0.062	0.064	0.063	0.038	0.035	0.037
Senegal	2011	0.124	0.154	0.133	0.111	0.150	0.123
Togo[α*]	2009	0.099	0.099	0.099	0.048	0.036	0.043
Uganda-1	2005	0.583	0.746	0.654	0.180	0.196	0.186
Uganda-2	2011	0.526	0.640	0.574	0.096	0.055	0.075
Uruguay[α*]	2009	0.051	0.060	0.054	0.036	0.036	0.036
Viet Nam-1	2006	n/a	n/a	n/a	n/a	n/a	n/a
Viet Nam-2[α]	2012	1.608	1.470	1.546	0.978	0.866	0.932
Yemen[α*]	2010	0.046	0.042	0.044	0.042	0.044	0.042

Notes: (a) We report the incidence density rate multiplied by 100; (α) Health problems due to employment; (*) Information about health is given by a child; (+) Information about hazardous conditions is given by a child.
Source: Calculations based on national household survey datasets (see Table 1).

Table A13. Incidence density rate of disease and injury,(a) by work in hazardous conditions(b) and sex

Country	Year	Not in hazardous conditions			In hazardous conditions		
		Male	Female	Total	Male	Female	Total
Albania[α*+]	2010	0.008	0.008	0.008	0.031	0.023	0.028
Bangladesh[α]	2013	0.100	0.074	0.090	0.080	0.055	0.073
Cambodia[α]	2012	n/a	n/a	n/a	n/a	n/a	n/a
Ecuador[α+]	2012	0.109	0.132	0.117	0.103	0.158	0.117
El Salvador	2013	0.128	0.108	0.118	0.103	0.115	0.105
Indonesia[α*+]	2009	0.011	0.011	0.011	0.034	0.033	0.034
Jordan[α*+]	2007	0.016	0.033	0.018	0.045	0.086	0.047
Kyrgyzstan[α*+]	2007	0.002	0.002	0.002	0.017	0.015	0.016
Madagascar[α*+]	2007	0.026	0.027	0.026	0.050	0.057	0.053
Malawi	2010	n/a	n/a	n/a	n/a	n/a	n/a
Moldova[α*+]	2009	0.008	0.006	0.007	0.037	0.049	0.041
Niger [α*+]	2009	0.015	0.016	0.016	0.056	0.050	0.053
Peru[α*+]	2007	0.031	0.030	0.030	0.067	0.077	0.071
Senegal	2011	n/a	n/a	n/a	n/a	n/a	n/a
Togo[α*+]	2009	0.045	0.032	0.039	0.104	0.107	0.105
Uganda-1	2005	n/a	n/a	n/a	n/a	n/a	n/a
Uganda-2	2011	n/a	n/a	n/a	n/a	n/a	n/a
Uruguay[α*+]	2009	0.024	0.028	0.025	0.047	0.063	0.050
Viet Nam-1	2006	n/a	n/a	n/a	n/a	n/a	n/a
Viet Nam-2[α]	2012	0.795	0.663	0.736	1.937	1.927	1.933
Yemen[α*+]	2010	0.024	0.026	0.025	0.059	0.071	0.062

Notes: (a) We report the incidence density rate multiplied by 100; (b) Hazardous conditions may vary from survey to survey and comprise work during night; carrying heavy loads; work in water bodies; work underground or at height; being exposed to dust, fumes, smoke, gases, fire, flames, loud noise or vibration, extreme temperature or humidity, insufficient lighting or ventilation, dangerous objects, chemicals, explosives; and etc.; beating; physical hurt; sexual abuse; (α) Health problems due to employment; (*) Information about health is given by a child; and (+) Information about hazardous conditions is given by a child.
Source: Calculations based on national household survey datasets (see Table 1).

Table A14. Incidence density rate of disease and injury,(a) by involvement in the hazardous work(b) and sex

Country	Year	Not in hazardous work			In hazardous work		
		Male	Female	Total	Male	Female	Total
Albania$^{\alpha*}$	2010	0.007	--	0.004	0.019	0.015	0.017
Bangladesh$^{\alpha}$	2013	0.101	0.094	0.098	0.089	0.047	0.077
Cambodia$^{\alpha}$	2012	0.004	0.002	0.003	0.003	0.002	0.002
Colombia$^{\alpha}$	2011	0.009	0.006	0.008	0.004	0.002	0.004
Ecuador$^{\alpha}$	2012	0.148	0.192	0.164	0.101	0.143	0.112
El Salvador	2013	0.160	0.168	0.164	0.094	0.055	0.087
Indonesia$^{\alpha*}$	2009	0.027	0.026	0.027	0.018	0.011	0.016
Jordan$^{\alpha*}$	2007	0.041	0.038	0.040	0.031	0.074	0.032
Kyrgyzstan$^{\alpha*}$	2007	0.009	0.005	0.008	0.008	0.006	0.007
Madagascar$^{\alpha*}$	2007	0.036	0.037	0.037	0.030	0.033	0.031
Malawi	2010	0.509	0.654	0.578	0.107	0.103	0.105
Moldova$^{\alpha*}$	2009	0.026	0.027	0.026	0.015	0.004	0.012
Niger$^{\alpha*}$	2009	0.043	0.036	0.039	0.020	0.010	0.016
Peru$^{\alpha*}$	2007	0.066	0.068	0.067	0.023	0.019	0.021
Senegal	2011	0.158	0.191	0.171	0.100	0.116	0.104
Togo$^{\alpha*}$	2009	0.112	0.105	0.109	0.041	0.031	0.037
Uganda-1	2005	0.645	0.698	0.670	0.106	0.153	0.120
Uganda-2	2011	0.456	0.510	0.480	0.107	0.047	0.084
Uruguay$^{\alpha*}$	2009	0.049	0.037	0.042	0.037	0.045	0.038
Viet Nam-1	2006	0.136	0.262	0.200	0.096	0.101	0.098
Viet Nam-2$^{\alpha}$	2012	1.210	1.092	1.144	1.424	1.335	1.387
Yemen$^{\alpha*}$	2010	0.049	0.040	0.046	0.040	0.045	0.041

Notes: (a) We report the incidence density rate multiplied by 100; (b) Hazardous conditions may vary from survey to survey and comprise work during night; carrying heavy loads; work in water bodies; work underground or at height; being exposed to dust, fumes, smoke, gases, fire, flames, loud noise or vibration, extreme temperature or humidity, insufficient lighting or ventilation, dangerous objects, chemicals, explosives; and etc.; beating; physical hurt; sexual abuse; (α) Health problems due to employment; (*) Information about health is given by a child; and (+) Information about hazardous conditions is given by a child.
Source: Calculations based on national household survey datasets (see Table 1).

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